* NOTICES *

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CLAIMS

[Claim(s)]
1. It is Approach of Detecting Encoded Information within Broadcast or Sound Recording Audible Signal, and is Sign.
It is said code signal about the code signal in which coding broadcast or a sound recording segment signal including an audible signal with ********** is received, however said coding recognition signal has predetermined bandwidth.
Make by becoming irregular with the recognition signal which has narrow band width of face from ****** predetermined bandwidth, and said audible signal is made to correlate with the copy of said code signal, and it is said recognition signal.
The approach including a phase of recovering.
2. Approach according to claim 1 of including further phase of synchronizing copy of said code signal with said coding recognition signal in front of said phase made correlating.
3. Approach according to claim 1 of including further phase of changing said audible-signal part into information on frequency domain.
4. Said phase made to correlate is an approach including carrying out the multiplication of the copy of said code signal for said audible part, and making a multiplication signal, and integrating with said multiplication signal and making said recovery recognition signal according to claim 1.
5. Approach according to claim 1 of including further phase which performs frequency synthesis according to code data, and makes copy of said code signal.
6. Said phase made to correlate is an approach including mixing said audible-signal part with the copy of said code signal according to claim 5.
7. Approach according to claim 1 of including further phase of memorizing said recovery recognition signal as stored data.
8. Approach according to claim 7 of including further phase of performing said phase which is received, is made correlating and is memorized in two or more locations, respectively, and sending stored data to central data processor from said two or more locations.
9. Approach according to claim 1 of including further phase of recovering information on addition which identifies at least one station, channel, and segment from received coding broadcast or sound recording segment signal.
10. The approach according to claim 9 of including further the phase of memorizing said recovery recognition signal with the information on said addition.
11. Said Received Coding Broadcast or Sound Recording Segment Signal is Said Audible Signal.
The approach according to claim 9 of including the information on said addition in a part.
12. Said received coding broadcast or sound recording segment signal is the approach according to claim 11 of including the information on said addition in the audible-signal frequency substantially exceeding 3,000Hz.
13. It is the approach according to claim 1 of including further the phase receive another broadcast data containing coding broadcast data, however make said coding broadcast data by modulating a code signal

with the selected bandwidth with the broadcast data signal which has narrow band width of face from said selected bandwidth, and make said another broadcast correlate with the copy of said code signal, and recover said broadcast data signal.
14. The phase of receiving said audible-signal part is an approach including receiving said audible-signal part from the equipment which the viewer puts on according to claim 1.
15. It is the Audible Signal Which it was the Approach of Detecting the Encoded Information within Broadcast or Sound-Recording Audible Signal, and the Audible-Signal Part Which Reproduced as a Sound of Coding Broadcast or Sound-Recording Segment Signal Changed, and a Conversion Audible-Signal Part Made, however Said Audible-Signal Part Had the Coding Recognition Signal Which Makes by Modulating a Code Signal with Predetermined Bandwidth with the Recognition Signal Which Has Narrow-Band Width of Face from Said Predetermined Bandwidth, and Reproduced Said Coding Recognition Signal as Said Sound.
It is a method including a phase of not being sensed as information within a part, and making said conversion audible-signal part correlate with the copy of said code signal, and recovering said recognition signal.
16. The approach according to claim 15 of including further the phase of opting for discernment of a viewer in the audible range of the audible-signal part reproduced as said sound.
17. It is the approach according to claim 16 of including further the phase transmit the information which encodes with a recognition signal including the information from which said audible-signal part discriminates the source of said coding broadcast, including that said phase to change changes the audible-signal part reproduced as a sound of coding broadcast, and identifies said source, and the information which show discernment of said viewer to a central data processor, and presume the viewer of said encoded information.
18. Said recognition signal is a method according to claim 16 of identifying the source of said coding broadcast or a sound recording segment signal.
19. The approach according to claim 18 of including further the phase of collecting discernment of said viewer and the sources of said coding broadcast with the name of said coding broadcast or discernment of a sound recording segment signal, or a sound recording segment signal.
20. Said recognition signal is the approach according to claim 16 of including further the phase collect the data which identify the name of said coding broadcast, one and said coding broadcast of the source of a sound recording segment signal, or discernment of a sound recording segment signal, and relate discernment of said viewer with the name of said coding broadcast, one and said coding broadcast of the source of a sound recording segment signal, or discernment of a sound recording segment signal.
21. Said phase made to change and correlate is the approach according to claim 16 of performing with the equipment which said viewer puts on.
22. The approach according to claim 16 of including further the phase of the 1st equipment with which said viewer learns said phase to change performing, and the 2nd equipment performing said phase made correlating, and transmitting said audible-signal part to said 2nd equipment on radio from said 1st equipment.
23. The approach according to claim 16 of including further the phase of memorizing said recovery recognition signal with a time amount stamp as stored data.
24. Recovery of said recognition signal is the approach according to claim 16 during a predetermined viewing-and-listening investigation period includes recovering said recognition signal.
25. Recovery of said recognition signal is the approach of the claim 24 publication including limiting the phase of said correlation to said predetermined viewer investigation period based on the copy of said code signal.
26. It is Approach of Determining One or More Sources of at Least One Protection-of-Copyrights Work Contained in Broadcast or Sound Recording Audible Signal. The coding broadcast or the sound recording segment signal containing at least one protection-of-copyrights work is received. However, said at least one protection-of-copyrights work contains an audible-signal part with the coding recognition signal which shows the source of said at least one protection-of-copyrights work. Said

coding recognition signal is what modulates and makes a code signal with predetermined bandwidth with a recognition signal with narrow band width of face from said predetermined bandwidth. Moreover, the method including a phase of collecting the data which are made to correlate said audible-signal part with the copy of said code signal, and recover said recognition signal, and express one or more sources of said at least one protection-of-copyrights work.

27. The approach according to claim 26 of including further the phase of recovering the information on additional which shows at least one station and channel of at least one protection-of-copyrights work, and discernment from the received coding broadcast or a sound recording segment signal.

28. Said recognition signal identifies at least one station and channel of said at least one protection-of-copyrights work, and the information on said addition is the approach of said at least one protection-of-copyrights work according to claim 27 which shows discernment at least.

29. It is Approach of Determining One or More Sources of Broadcast or at Least One Commercial Advertisement in Sound Recording Audible Signal. Coding broadcast or a sound recording segment signal including at least one commercial advertisement is received. However, said at least one commercial advertisement contains an audible-signal part with the coding recognition signal which shows the source of said at least one commercial advertisement. Said coding recognition signal is what modulates and makes a code signal with predetermined bandwidth with a recognition signal with narrow band width of face from said predetermined bandwidth. Moreover, the method including a phase of collecting the data which are made to correlate said audible-signal part with the copy of said code signal, and recover said recognition signal, and express one or more sources of said at least one commercial advertisement.

30. The approach according to claim 29 of including further the phase of recovering the information on additional which shows at least one station and channel of said at least one commercial advertisement, and discernment from the received coding broadcast or a sound recording segment signal.

31. Said recognition signal identifies at least one station and channel of said at least one commercial advertisement, and the information on said addition is the approach of said at least one commercial advertisement according to claim 30 which shows discernment at least.

32. An approach including the phase which is mixed with the audible signal which modulates the code signal which is the approach of encoding information and has predetermined bandwidth in the audible signal broadcast or recorded with the recognition signal which has narrow band width of face from said predetermined bandwidth, and makes a coding recognition signal, and broadcasts or records said coding recognition signal, and makes an output signal.

33. The approach according to claim 32 of including further the phase mixed with the information signal of addition of said output signal.

34. The approach according to claim 32 of including further the phase which carries out low-pass wave filtration of said coding recognition signal, before mixing with said audible signal.

35. The approach according to claim 32 of including further the phase which carries out inverse transformation of said coding recognition signal, before mixing with said audible signal.

36. The approach according to claim 32 of including further the phase which performs frequency synthesis according to predetermined code data, and makes said code signal.

37. Said phase to modulate is the approach according to claim 32 of modulating a code signal with the frequency spectrum which matches the frequency response characteristic of equipment, and including reproducing as a sound said audible signal broadcast or recorded.

38. Said phase to modulate is an approach including modulating a code signal with the frequency range of about 300 to 3,000 Hz according to claim 32.

39. The approach according to claim 32 of being the gradual combination which receives said output signal, is made to correlate said received output signal with the copy of said code signal, and recovers said recognition signal, and memorizes said recovery recognition signal as stored data.

40. The approach according to claim 39 of including further the phase of performing said phase which is received, is made correlating and is memorized in two or more locations, respectively, and sending stored data to central apparatus from said two or more locations.

41. Modulate Code Signal Which is Approach of Encoding Information and Detecting the Encoded Information Again, and Has Predetermined Bandwidth in Audible Signal Broadcast or Recorded with Recognition Signal Which Has Narrow Band Width of Face from Said Predetermined Bandwidth, Make Coded Signal, and it is Said Coding Recognition Signal.
The method including a phase of mixing with the aforementioned audible signal, making an output signal, changing said output signal into the format reproduced as a sound, as said coding recognition signal is not sensed as information from a viewer, making a conversion signal, and making said conversion signal correlate with the copy of said code signal, and recovering said recognition signal, and memorizing said recovery recognition signal as stored data.
42. Phase Which Modulates Said Code Signal It includes modulating said code signal with a recognition signal including the information which identifies the source of coding broadcast. Moreover, it opts for discernment of the viewer who is in the audible range of the output signal reproduced as a sound in each locations of two or more. The approach according to claim 41 of including further the phase of sending the information which identifies discernment of the viewer of the source of coding broadcast and each locations of two or more to a central data processor, and presuming the viewer of said coding broadcast.
43. It is equipment which it has in a means are equipment which detects the encoded information within broadcast or a sound-recording audible signal, correct with a means receive coding broadcast or a sound-recording segment signal including an audible signal with a coding recognition signal, make when said coding recognition signal modulates a code signal with predetermined bandwidth with the recognition signal which has narrow-band width of face from said predetermined bandwidth, make said audible-signal part correlate with the copy of said code signal, and recover said recognition signal.
44. Said means made to correlate is equipment according to claim 43 which makes said audible-signal part correlate with the copy with which said code signal synchronized, including further a means to synchronize the copy of said code signal with said coding recognition signal.
45. Equipment according to claim 43 further equipped with a means to change said audible-signal part into the information on a frequency domain.
46. Said means made to correlate is equipment [equipped with the means which carries out the multiplication of the copy of said code signal to said audible part, and makes a multiplication signal, and the means which integrates with said multiplication signal and makes said recovery recognition signal] according to claim 43.
47. Equipment according to claim 43 further equipped with the means which performs frequency synthesis according to code data, and makes the copy of said code signal.
48. Said means made to correlate is equipment [equipped with a means to mix said audible-signal part with the copy of said code signal] according to claim 47.
49. Equipment according to claim 43 further equipped with a means to memorize said recovery recognition signal as stored data.
50. Equipment according to claim 49 which is equipped with two or more equipments which include said receiving means, said correlation means, and said storage means, respectively, puts said each equipment on two or more locations, respectively, and is further equipped with a means to send stored data to a central data processor from said each locations of two or more further.
51. Equipment according to claim 43 further equipped with a means to recover the information on the addition which identifies at least one station, channel, and segment from said received coding broadcast or a sound recording segment signal.
52. Equipment according to claim 51 further equipped with a means to memorize said recovery recognition signal with the information on said addition.
53. Said Received Coding Broadcast or Sound Recording Segment Signal is Said Audible Signal. Equipment according to claim 51 which includes the information on said addition in a part.
54. Said received coding broadcast or sound recording segment signal is equipment according to claim 53 which includes the information on said addition in the audible-signal frequency substantially exceeding 3,000Hz.
55. It is equipment according to claim 43 which it has in a means said receiving means is equipped with

a means receive another broadcast data containing coding broadcast data which make by modulating a code signal with the selected bandwidth with the broadcast data signal which has narrow-band width of face from said selected bandwidth, and said correlation means makes correlate said another broadcast with the copy of said code signal, and recover said broadcast data signal.
56. A means to receive said audible-signal part is equipment according to claim 43 which receives said audible-signal part from the equipment which the viewer puts on.
57. Means Which Changes Audible-Signal Part Which is Equipment Which Detects Encoded Information within Broadcast or Sound Recording Audible Signal, and was Reproduced as a Sound of Coding Broadcast or Sound Recording Segment Signal, and Makes Conversion Audible-Signal Part, However, said audible-signal part has the coding recognition signal made by modulating a code signal with predetermined bandwidth with the recognition signal which has narrow band width of face from said predetermined bandwidth. Said coding recognition signal is equipment equipped with a means for it not to be sensed as information within the audible-signal part reproduced as said sound, and to make said conversion audible-signal part correlate with the copy of said code signal, and to recover said recognition signal.
58. Equipment according to claim 57 further equipped with a means to opt for discernment of a viewer in the audible range of the audible-signal part reproduced as said sound.
59. It is equipment according to claim 58 further equipped with a means transmit the information which said means change changes the audible-signal part reproduced as a sound of coding broadcast, encodes said audible-signal part with a recognition signal including the information which identifies the source of said coding broadcast, and identifies said source, and said viewer's discernment ****** information to a central data processor, and presume the viewer of said encoded information.
60. Said recognition signal is equipment according to claim 58 which identifies the source of said coding broadcast or a sound recording segment signal.
61. Equipment according to claim 60 further equipped with a means to collect discernment of said viewer and the sources of said coding broadcast with the name of said coding broadcast or discernment of a sound recording segment signal, or a sound recording segment signal.
62. Said recognition signal is equipment according to claim 58 further equipped with a means collect the data which identify the name of said coding broadcast, one and said coding broadcast of the source of a sound recording segment signal, or discernment of a sound recording segment signal, and relate discernment of said viewer with the name of said coding broadcast, one and said coding broadcast of the source of a sound recording segment signal, or discernment of a sound recording segment signal.
63. Said conversion means and said correlation means are equipment according to claim 58 formed in the equipment which said viewer puts on.
64. Equipment according to claim 58 further equipped with a means to establish said conversion means in the 1st equipment which said viewer puts on, to establish said correlation means in the 2nd equipment, and to transmit said audible-signal part to said 2nd equipment on radio from said 1st equipment.
65. Equipment according to claim 58 further equipped with a means to memorize said recovery recognition signal with a time amount stamp as stored data.
66. A means to make said audible-signal part correlate is equipment according to claim 58 with which during a predetermined viewing-and-listening investigation period includes recovering said recognition signal.
67. Equipment of the claim 66 publication further equipped with a means to limit actuation of said correlation means to said predetermined viewer investigation period, based on the copy of said code signal.
68. It is Equipment Which Determines One or More Sources of at Least One Protection-of-Copyrights Work Contained in Broadcast or Sound Recording Audible Signal. A means to receive the coding broadcast or the sound recording segment signal containing at least one protection-of-copyrights work, However, for said coding recognition signal, said at least one protection-of-copyrights work is a recognition signal which has narrow band width of face for a code signal with predetermined bandwidth

from said predetermined bandwidth including an audible-signal part with the coding recognition signal which shows the source of said at least one protection-of-copyrights work.
Equipment equipped with a means to come out, become irregular and make, and to make said audible-signal part correlate with the copy of said code signal, and to recover said recognition signal, and a means to collect the data which express one or more sources of said at least one protection-of-copyrights work again.
69. Equipment according to claim 68 further equipped with a means to recover the information on the addition which identifies at least one station and channel of at least one protection-of-copyrights work, and discernment from the received coding broadcast or a sound recording segment signal.
70. Said recognition signal identifies at least one station and channel of said at least one protection-of-copyrights work, and the information on said addition is equipment of said at least one protection-of-copyrights work according to claim 69 which identifies discernment at least.
71. It is Equipment Which Determines One or More Sources of Broadcast or at Least One Commercial Advertisement in Sound Recording Audible Signal. A means to receive coding broadcast or a sound recording segment signal including at least one commercial advertisement, However, said at least one commercial advertisement contains an audible-signal part with the coding recognition signal which shows the source of said at least one commercial advertisement. Said coding recognition signal is what modulates and makes a code signal with predetermined bandwidth with a recognition signal with narrow band width of face from said predetermined bandwidth. Moreover, equipment equipped with a means to make said audible-signal part correlate with the copy of said code signal, and to recover said recognition signal, and a means to collect the data which express one or more sources of said at least one commercial advertisement again.
72. Equipment according to claim 71 further equipped with a means to recover the information on the addition which identifies at least one station and channel of said at least one commercial advertisement, and discernment from the received coding broadcast or a sound recording segment signal.
73. Said recognition signal identifies at least one station and channel of said at least one commercial advertisement, and the information on said addition is equipment of said at least one commercial advertisement according to claim 72 which identifies discernment at least.
74. Equipment equipped with the means which modulates the code signal which is equipment which encodes information and has predetermined bandwidth in the audible signal broadcast or recorded with the recognition signal which has narrow band width of face from said predetermined bandwidth, and makes a coding recognition signal, and the means which is mixed with the audible signal which broadcasts or records said coding recognition signal, and makes an output signal.
75. Equipment according to claim 74 further equipped with a means to mix with the information signal of addition of said output signal.
76. It is equipment according to claim 74 which mixes with broadcast or a sound recording audible signal the coding recognition signal which carried out wave filtration of said mixed means by having further the low-pass wave filtration means of said coding recognition signal.
77. It is equipment according to claim 74 which mixes with said audible signal the coding recognition signal which carried out inverse transformation of said mixed means by having further the inverse transformation means of said coding recognition signal.
78. Equipment according to claim 74 further equipped with the means which performs frequency synthesis according to predetermined code data, and makes said code signal.
79. Said means to become irregular is equipment according to claim 79 which modulates a code signal with the frequency spectrum which matches the frequency response characteristic of equipment, and reproduces as a sound said audible signal broadcast or recorded.
80. Said means to become irregular is equipment according to claim 74 which modulates a code signal with the frequency range of about 300 to 3,000 Hz.
81. A means to receive said output signal, a means to make said received output signal correlate with the copy of said code signal, and to recover said recognition signal, a means to memorize said recovery recognition signal as stored data, and equipment according to claim 74 that is the combination of **.

82. Equipment according to claim 81 further equipped with two or more equipments which are equipped with said receiving means, said correlation means, and said storage means, and are formed in two or more locations each, respectively, and a means to send stored data to a central data processor from each aforementioned locations of two or more.
83. It is Equipment Which Encodes Information and Detects the Encoded Information in Audible Signal Broadcast or Recorded Again. The means which modulates a code signal with predetermined bandwidth with the recognition signal which has narrow band width of face from said predetermined bandwidth, and makes a coded signal, The means which mixes said coding recognition signal with said audible signal, and makes an output signal, A means by which it changes said output signal into the format reproduced as a sound as said coding recognition signal is not sensed as information from a viewer, and it makes a conversion signal, Equipment equipped with a means to make said conversion signal correlate with the copy of said code signal, and to recover said recognition signal, and a means to memorize said recovery recognition signal as stored data.
84. A Means to Modulate Said Code Signal A means to opt for discernment of the viewer who is in the audible range of the output signal which was equipped with a means to modulate said code signal with a recognition signal including the information which identifies the source of coding broadcast, and was reproduced as a sound in each locations of two or more, Equipment according to claim 83 further equipped with a means to send the information which identifies discernment of the viewer of the source of coding broadcast and each locations of two or more to a central data processor, and to presume the viewer of said coding broadcast.
85. Said another broadcast is the approach according to claim 13 of being FM broadcasting.
86. Said another broadcast is equipment according to claim 55 which is FM broadcasting.
87. An approach including the phase supplies said audible-signal part to a means to change said audible-signal part into the signal of a sound, and said viewer enables it to use for it according to claim 14.
88. Equipment according to claim 56 which includes further the means supplies said audible-signal part to a means to change said audible-signal part into the signal of a sound, and said viewer enables it to use for it.
89. The approach according to claim 1 of including further the phase which detects recording said coding broadcast segment signal with a sound recording means.
90. Equipment according to claim 43 which includes further a means to detect recording said coding broadcast segment signal with a sound recording means.
91. The approach according to claim 26 of including further the phase of analyzing the collected data which receive, and perform the phase made correlating in two or more locations, and express one or more sources of a recovery recognition signal and at least one protection-of-copyrights work from said two or more locations, and detecting an unjust copy.
92. Equipment according to claim 68 which includes further a means to analyze the collected data which express one or more sources of a recovery recognition signal and at least one protection-of-copyrights work from said two or more locations, including two or more equipments formed in the location of two or more each, including a receiving means and a correlation means respectively, and to detect an unjust copy.
93. Said Phase to Modulate Modulates 1st Broadcast Signal with Recognition Signal of Television Broadcasting, and Makes Coding Television Recognition Signal. The phase which modulates the different 2nd code signal from said 1st signal with the recognition signal of a radio broadcasting, and makes a coding radio recognition signal is included. Moreover, moreover, said phase to mix An approach including mixing with the 2nd audible signal which mixes said coding television recognition signal with the 1st audible signal broadcast as a part of television signal, and broadcasts said coding radio recognition signal as a part of radio broadcasting according to claim 32.
94. 1st Modulation Means Which Said Modulation Means Story Modulates 1st Broadcast Signal with Recognition Signal of Television Broadcasting, and Makes Coding Television Recognition Signal, It has the 2nd modulation means which modulates the different 2nd code signal from said 1st signal with the recognition signal of a radio broadcasting, and makes a coding radio recognition signal. Moreover, said

mixed means Equipment [equipped with a 1st mixing means to mix said coding television recognition signal with the 1st audible signal broadcast as a part of television signal, and a 2nd mixing means to mix said coding radio recognition signal with the 2nd audible signal broadcast as a part of radio broadcasting] according to claim 74.
95. Said phase to mix is an approach including mixing each coding recognition signal with one to which two or more broadcast signals including at least one radio broadcasting signal and at least one television broadcasting signal correspond according to claim 32, including that said phase to modulate modulates the 1st code signal of two or more broadcast locations with each recognition signal.
96. Said modulation means is equipment [equipped with two or more modulation means to modulate the 1st code signal with each recognition signal, respectively, and two or more mixed means to mix each coding recognition signal with one to which two or more broadcast signals including at least one radio broadcasting signal and at least one television broadcasting signal correspond, respectively] according to claim 74.
97. Said phase to modulate is an approach including modulating the code signal which communicates with a predetermined geographical area with said recognition signal according to claim 32.
98. Said modulation means is equipment according to claim 74 which modulates the code signal which communicates with a predetermined geographical area with said recognition signal.
99. The coding broadcast signal which gives the broadcast signal which is a coding broadcast signal and includes an audible signal, modulates a code signal with predetermined bandwidth with the recognition signal which has narrow band width of face from said predetermined bandwidth, makes a coding recognition signal, and mixes said coding recognition signal with said audible signal, and makes said coding broadcast signal and which is made especially more.
100. Recognition Signal Which Has Narrow Band Width of Face for Code Signal Which is Coding Sound Recording Signal, Gives Signal Including Audible Signal to Record, and Has Predetermined Bandwidth from Said Predetermined Bandwidth
The signal for sound recording which came out, became irregular, and made the coding recognition signal, made the signal for sound recording which mixed said coding recognition signal with said audible signal, and was encoded, and was encoded is recorded, and it is a sign.
The coding record signal which makes a ****** signal and which is made especially more.
101. It is the approach of encoding information to an audible signal. The signal including two or more notations to encode is received. About said each notations of two or more, two or more digital data of each showing a corresponding group's frequency are read from memory, and a coded signal is made. The approach including a phase of mixing said coded signal with said audible signal, and making an output signal.
102. Two or more digital data of the each in said memory are the approaches according to claim 101 of being the digital data of a time domain.
103. The approach according to claim 101 of including further the phase which carries out D/A conversion of said coded signal in front of said phase to mix.
104. The approach according to claim 101 of including further the phase of memorizing two or more digital data of the each in said memory in the memory address range which adjoins, respectively.
105. The approach according to claim 104 of including further the phase which downloads the digital data which puts said memory on the location distant from the main location, and expresses the group of said frequency in said memory from said main location.
106. It is Equipment Which Encodes Information to Audible Signal. Input Which Receives Coded Signal Including Two or More Notations, Memory which memorizes two or more groups of digital data who correspond to each [of said notation], respectively and express each group's frequency again, Means which will read the group of the each of digital data from said memory according to this if each notation is received to an input Equipment equipped with the means which mixes said coded signal with said audible signal, and makes an output signal.
107. Each group of the digital data in said memory is equipment according to claim 106 which is the digital data of a time domain.

108. The approach according to claim 106 which carries out D/A conversion of said coded signal, makes the coded signal of an analog, and is further equipped with a means to mix with said audible signal.
109. Equipment according to claim 106 further equipped with a means to memorize the digital data of each group in memory in the memory address range which adjoins, respectively.
110. Equipment according to claim 109 further equipped with a means to put said memory on the location distant from the main location, and to download the group of said digital data in said memory from said main location.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
The approach and equipment which encode / decode broadcast or a sound recording segment, and supervise the viewing and listening Background of invention This invention relates to encoding decoding the work of the broadcast sent by wireless, the cable, the satellite, or others, the video distributed by the media recorded beforehand, music, or others, and supervising those viewing and listening.
A broadcast segment contains a program, commercials, etc. which were taken on a raw program and a raw tape. These segments are broadcast according to various schedules, such as stopgap of a program frame without a nationwide broadcast, the specific broadcast in an area, and a schedule. Furthermore, the broadcasting hours by which the schedule was carried out also have the case of national unification broadcast, and a broadcaster may change them in consideration of an area.
Segments, such as commercials, are predetermined channels or there is [when it was actually broadcast by the predetermined station, and] need of wanting to detect independently.
Moreover, since a broadcast tariff generally changes according to the number of viewers, there is need of wanting to supervise the viewer of a broadcast segment. Furthermore, in a market research technique, some which examine the effectiveness given to a consumer's purchase decision have the frequency and/or property of a broadcast segment.
There are some conventional methods of detecting discernment of a broadcast segment. However, it is hard to use whether it is pushy to a viewer with every complicated approach (intrusivenss), and limitations -- there are many errors -- have at least one in an environment with many noises.
There is a method of keeping the diary of the program to which the viewer from whom a large number were chosen as one of them viewed and listened, respectively. It is a premise that the viewer as whom this approach was chosen cooperates in timely spontaneously again. The advertiser, the advertising agency, and the broadcaster fear whether having viewed and listened to media is completely reported to a respondent's diary. It is guessed from investigation data that it is not reported enough how the small child, the teenager, and the young man viewed and listened to media especially. Since it is very troublesome to be unable to keep a diary completely or to keep a diary, these groups also have the person who thinks that perfect information is not reported.
In order to avoid such a fault of people recording, the passive recording method was studied. The description of the passive recording method is detecting the broadcast segment to which formed a certain equipment, and the viewer's viewed and listened in the real time, recording this information, and referring to a central data processor later, namely, uploading. Since information is collected in the format that a calculating machine can be read, if a passive recording apparatus is used, data processing can be performed easily. Since the information collected by passive record does not have human being's error, it is reliable at this point.
The equipment called "the personal passive viewer instrument" which it can be small and can be carried is proposed.
People attach this equipment to the body and it supervises the broadcast segment to which it viewed and

listened. Since a viewer can find on individual level what was determined, this instrument is very desirable.
The main problems of passive record are whether the segment to which the viewer is viewing and listening is correctly detectable. The method proposed has what identifies a broadcast segment by no correcting, and the thing which corrects a segment and makes discernment easy before broadcast.
The one approach of using for discernment of a non-corrected segment is pattern recognition. Each segment is analyzed to a broadcast front or the back. The analyzed property determines the "broadcast signature." The table of a broadcast signature is created by each monitor station, or is prepared beforehand. The actuation analyzes the description of the segment which a monitor station is broadcasting, makes one of the broadcast signatures match, namely, recognizes the pattern. Since this approach uses the comparatively complicated technique, realizing is troublesome. It is because each monitor station must be able to recognize this whenever it introduces a new segment.
By some discernment approaches, the method which gives the code which corrects a broadcast segment and can recognize detection equipment is used. The advantage of this method is not updating a monitor station, whenever it introduces a new broadcast segment.
The 3,004,104th (HEMUBU look (Hembrooke)) has proposed controlling the narrow-band (10Hz width of face) of some (1000Hz) frequencies of United States patent voice grade at intervals of scheduled time according to a predetermined code. However, if a viewer shortens control to extent which cannot be sensed as information, this control will tend to receive interference from a surrounding noise source. Moreover, it was proposed by the start of each segment, and the end by the identification code of narrow band width of face (100Hz) that only a short time (3 seconds) modulates the subcarrier of audio frequency. This approach is not satisfactory because of that a metering installation cannot detect identification code or being weak in a noise, when reception of a viewer is too slow in being too early.
Another proposal is mixing the identification code of the frequency below audible with the conventional audible sound in a program segment. This approach assumes that a monitor station receives broadcast, before a receiver reproduces a sound. It is because this information is not reproduced with fidelity high like a bad nature thing is in a receiver and a personal metering installation can recognize this. Therefore, this approach is not suitable for the personal measuring instrument of the mold which supervises the signal of a sound.
a sound -- a certain technique proposed as a thing about easy sound recording is inserting the sequence of a code signal instead of the frequency removed from the audible signal except for the sequence (this sequence -- a signal -- on the way -- it comes out and changes) of six frequency bands. Since this inserted signal is removed quite simply, this approach does not work. Moreover, this approach is weak in a noise, especially an audible noise.
The purpose and outline of invention The purpose of this invention is as follows.
- The information about the broadcast or the sound recording segment to which the viewer viewed and listened is offered. - A noise provides a perimeter with the information about the broadcast or the sound recording segment to which the viewer viewed and listened also by a certain case considerably. - The approach and equipment with which it encodes a viewing-and-listening signal as a code is not sensed by the viewer as information are offered. - It detects which segment was actually broadcast in predetermined time amount, and is -. Central apparatus are provided with a viewer's media viewing-and-listening record, and it is -. Receive the information hidden in the existing transmission channel from central apparatus by coding transmission.
In one mode of this invention, information is encoded in broadcast or a sound recording audible signal. A code signal with predetermined bandwidth is modulated with the recognition signal which has narrow band width of face from predetermined bandwidth, and a coded signal is made. A coding recognition signal is mixed with broadcast or a sound recording audible signal, and an output signal is made.
In another mode of this invention, the coding broadcast or the sound recording segment signal containing an audible-signal part with a coding recognition signal is received. A coding recognition signal modulates and makes a code signal with predetermined bandwidth with a recognition signal with narrow band width of face from predetermined bandwidth. An audible-signal part is made to correlate

with the copy of a code signal, and a recognition signal is recovered.
The viewer itself performs reception and correlation on the body with the price or the personal equipment to carry, and record of the broadcast to which the viewer viewed and listened, or a sound recording segment is made from a certain application. This record is uploaded to central apparatus with discernment of a viewer.
Another supervisory equipment extracts the information on the addition which performs reception and correlation like personal equipment, and is included in broadcast or a sound recording segment, and makes all records of broadcast. This supervisory equipment communicates with central apparatus, and uploads information.
Central apparatus make the information on the addition about the item within each viewer records and these records match, and give all records of who viewed and listened to what when.
A coding broadcast signal is given in another mode of this invention. In order to make a coding broadcast signal, a broadcast signal including an audible signal is given, a code signal with predetermined bandwidth is modulated with the recognition signal which has narrow band width of face from said predetermined bandwidth, a coding recognition signal is made, and a coding recognition signal is mixed with an audible signal.
A coding sound recording signal is given in still more nearly another mode of this invention. The signal which includes an audible signal in order to make a coding sound recording signal and to record is given, a code signal with predetermined bandwidth is modulated with the recognition signal which has narrow band width of face from said predetermined bandwidth, a coding recognition signal is made, a coding recognition signal is mixed with an audible signal, a coding sound recording signal is made, a coding sound recording signal is recorded, and a coding sound recording signal is made.
Still more nearly another mode of this invention gives the approach of encoding information into an audible signal. Said approach includes the phase which receives the signal including two or more notations to encode, reads each digital data of two or more showing the group to whom a frequency corresponds about each notations of two or more from memory, makes a coded signal, mixes a coded signal with an audible signal and makes an output signal.
In still more nearly another mode of this invention, the equipment which encodes information in an audible signal The memory which memorizes the group of two or more digital data which each corresponds to each notation with the input which receives the signal including two or more notations to encode, and express each group of a frequency, It has the means which will read each group of digital data from memory according to this, and will make a coded signal if each notation is received in an input, and the means which mixes a coded signal with an audible signal and makes an output signal.
The above of this invention and other purposes and functions, and an advantage become clear by reading detailed explanation of the following about the embodiment of some instantiation in relation to an attached drawing. A corresponding part and a corresponding element are identified with the same reference number in some drawings among a drawing.
Easy explanation of a drawing Drawing 1 is a block diagram of this invention which is an encoder [like] 1 operative condition.
The 2A, 2B, and 2C Fig. are block diagrams of the personal monitor used with the encoder of Fig. 1.
the -- 3A-3K Figs. are the 1st, 2A, 2B, and a frequency use chart used for explaining the embodiment of 2C Fig.
the -- operative condition with this invention another [4A Fig.] -- it is the block diagram of the encoder which can be set like.
the -- 4B Fig. -- the -- it is the block diagram of the equipment which programs ROM of the encoder of 4A Fig. by the code signal of a time domain.
The 4th C Fig. is a block diagram of the coding system of the embodiment of this invention.
Fig. 5 is a block diagram of the encoder of another embodiment of this invention.
Fig. 6 is a block diagram of the personal monitor used with the encoder of Fig. 5.
Fig. 7 -- still more nearly another operative condition of this invention -- it is the block diagram of an encoder [like].

Fig. 8 is a block diagram of the personal monitor used with the encoder of Fig. 7.
Fig. 9 -- still more nearly another operative condition of this invention -- it is the block diagram of supervisory equipment [like].
the operative condition which was excellent in some -- detailed explanation [like] the operative condition which was excellent in some -- the passive supervisory equipment which operates without this invention's adding identification information to the audible part of the segment by setting like before broadcasting a certain broadcast segment using the spread-spectrum technique chosen from some alternative, and people operating it is formed, and the identification information in a broadcast segment is detected and recorded. Here, the word of a "instrument" and a "measuring instrument" is used for pointing out equipments, such as passive broadcast supervisory equipment. The information recorded on each instrument is periodically uploaded to a central data processor, and is memorized everlastingly.
In such the embodiment, the spectrum spread system to be used encodes the identification information which was formed in the recognition signal in which a data rate generally has narrow band width of face comparatively low and which is called x (w), x (t), and x (n) here. The word of the "signal" used here includes an electrical signal and any formats which it not only expresses the information which memorizes, and processes and/or is transmitted, but materialized information. The word of the "bandwidth" used here includes not only the difference between a frequency band and a limitation but frequency spacing or a frequency range. The instantiation of explanation of the word used here is the purpose, and since this contractor may use these words in suitable, another semantics, he is not necessarily limited to this. In the outstanding embodiment, the recognition signal formed in this way is modulated by the code signal. The code signal has been independent of a call and data also with the diffusion signal, and has wide band width of face more.
supposing a code signal is a fake random signal and after the modulation of a broadcast segment is sensed -- as information -- coming out -- there is nothing and it is sensed as a low white noise generally called hysterics. A code signal is level sufficiently lower than the broadcast audible-signal level of normal, and is an audible signal.
It is alike, mixes and is made not to be sensed as information. Moreover, the signal which mixed with the audible signal by the low according to the approach of acquiring an audible signal, in another mode, for example, was reproduced as a sound
It may be alike and you may decode as receiving baseband signaling.
Outstanding one of the codes is the sequence of the sound applied to the voice grade which occupies about 300 to 3,000 Hz. All broadcast type and all receiving sets are because the speech information of quality appropriate at least is reproduced.
In each measuring instrument, the audible-signal part of a broadcast segment is made to correlate with the reference copy with which the code signal synchronized using one of the processes explained below, for example, a recognition signal is recovered as compared with an effective information item (for example, effective channel in a related geographical area), and this is memorized.
In order to use spread-spectrum coding, even if the noise of a remarkable perimeter is in the audible bandwidth which transmits a code signal, good recovery of identification information can be performed. Furthermore, a coding recognition signal is not sensed by the viewer.
Generally [the segment to broadcast] in a certain embodiment, the audible-signal part of 20 to 22,000 Hz is encoded by the identification information of the program source of a station, or a channel and others. This is performed by mixing with the code signal which modulated the audible-signal part with the information signal which carries this information. This information identifies the specific broadcast source uniquely. If only broadcasting hours and the broadcast source (that is, it is an office or a channel and is not necessarily discernment of a program segment) are transmitted, the amount of information per broadcast segment can be shortened.
A passive instrument (it is desirable for the selected viewer to attach to the body) recovers a source identifier, and memorizes this in its memory with time amount and the date stamp. The recharge of the instrument is put and carried out to base equipment in the end of daily, the recording information is extracted, and if required, new information can be loaded to an instrument. When extract information is

collected with domestic storage and a sending set and the family has not telephoned, base equipment or storage, and a sending set are used, and this information is transmitted to central apparatus with the dialing telephone line. Two or more passive instruments are connectable with one base equipment or storage, and a sending set. Or the instrument itself may be sent to central apparatus and the recorded data may be extracted.
Furthermore, the information on the addition about a broadcast segment, for example, the information which identifies a specific program and specific commercials, is encoded into the audible-signal part of a segment. The code signal which has the range which is audible-signal within the limits, for example, 4,000 to 20,000 Hz, but the same frequency range as all the range of an audible signal or more than voice grade may be used for the information on this addition.
Or it becomes irregular directly [audible signal] on voice grade or in the bottom, without performing spread-spectrum coding, or the information on additional may be formed in the additional information signal which modulates, other parts, for example, video signal, of a broadcast segment.
Another supervisory equipment receives a baseband broadcast segment, and extract the information on the addition about a broadcast segment from there, and send this to a central data processor, the source identification information from individual supervisory equipment is made to match, and perfect viewer record who viewed and listened to what when is given. Or another supervisory equipment is formed in the head end of a broadcast location, for example, a cable system, and just before performing cable broadcast, a signal may be supervised directly.
While spread-spectrum coding of source identification information was excellent, direct sequence coding in a frequency domain is used for law. An option performs direct sequence coding and frequency hopping (frequency hopping) in a time domain. These approaches are explained below, respectively. However, this invention is not necessarily limited to these approaches, and other spectrum diffusion methods using time amount hopping (time hopping), a pulse FM system, or a hybrid method are possible for it.
the [Fig. 1 showing an encoder for one embodiment of this invention below, Fig. 2 showing a personal monitor, and / which shows a frequency use chart] -- it explains using 3A-3K Fig.
Fig. 1 shows one embodiment which was excellent in the encoder 100 of this invention. An encoder 100 is equipped with input terminals 105 and 110, a modulator 120, an inverter 130, a buffer 140, D/A converter 150, a low-pass filter 160, a mixer 170, and an output terminal 175.
The source recognition signal X (omega) which consists of the bit format in a frequency domain is supplied to an input terminal 105, and the antipodal code signal G of the frequency domain of a bit format (omega) is similarly supplied to an input terminal 110. An antipodal signal has only an opposite value [say / "1" and "-1"]. In this example, the value of X (omega) and G (omega) consists only of the real number, and imaginary part is zero. These signals are explained below at a detail.
The "bit" used here means a part of unit of data, for example, source identifier, and a "chip" means the base unit of a code. Since the bandwidth of an information signal is narrower than the predetermined bandwidth of a code signal, 1 bit corresponds to many chips. Each chip is expressed with a "point" in a frequency domain. This is a data value substantially.
It responds to various kinds of needs, such as changing a code signal every day, for example, barring discernment of tape playback, limiting collected data to a predetermined investigation period, and unjust access. A code signal can be sent to one or more encoders from central apparatus using one of many transmission systems. For example, a code signal can be transmitted as data encoded to broadcast using the approach explained later in relation to Public Switched Telephone Networks, a Local Area Network, satellite communication, or Fig. 9.
By using a code which is different on radio and television, only radio can collect the data of only television with the same personal monitor. Or a code may be assigned based on a geographical location, or the monitor of viewing and listening may be limited only to a commercial advertisement.
Supplying the source recognition signal X (omega) and the code signal G (omega) to a modulator 120, a modulator 120 modulates these signals about each frequency component using the joint technique of direct multiplication, an exclusive OR, or others, and forms the source recognition signal which the

frequency domain encoded.
When it chooses correctly, the coded signal of a frequency domain has the property of not only making the spectrum matching but compensating ** or other sound environments to supervise in the general frequency response of the receiver circuit and loudspeaker which a viewer uses.
Supplying the coding source recognition signal of a frequency domain to an inverter 130, an inverter 130 performs a reverse fast Fourier transform (FFT) or wavelet transform (wavelet tranform), makes the coding source recognition signal of a time domain, and supplies this to a buffer 140. The buffer 140 is illustrated as random access memory which holds the data item of 2,048 and is used with FIFO. The contents of the buffer 140 are made as 16-bit D/A converter 150, and delivery and the coding recognition signal of an analog are made into the level of about 90dB range.
In the one embodiment, a converter 150 is sampled at the rate of per second 8,192 sample. The die length of a buffer 140 is equivalent to the selected sampling rate, i.e., (per second 8,192 sample), /(4 bits/s) =2,048 sample / bit, and the 1-bit time amount which comes out. Corresponding FFT has die length of 1,024 points in a frequency domain, and each point is equivalent to 4Hz. Although 676 in the frequency range of 300 to 3,000 Hz are used, 75 corresponding to the range of zero to 296 Hz and 273 corresponding to the range of 3,004 to 4,092 Hz are not used. Supplying the coding recognition signal of an analog to a low-pass filter 160, a low-pass filter 160 removes a desired alias out of range.
If it combines with the audible part of a segment by the ratio which chose the coding recognition signal which carried out wave filtration so that it might not be audible, the output terminal 175 of an encoder 100 is supplied and it is with a mixer 170, it will broadcast by the conventional approaches, such as RF, a satellite, and cable broadcast, with other parts of a segment, or will record to sound recording media, such as a tape. Coding recognition signal
The level to combine is chosen so that it may be mostly set to the normal noise level permitted in many audible programs. The information on the addition for different supervisory equipment from a personal monitor is also separately supplied to a mixer 170, and is combined with a coding recognition signal and an audible part.
The processing phase from the modulation which each above-mentioned element of an encoder 100 performs to mixing is repeated until it encodes a source recognition signal completely into the audible part of the segment broadcast or recorded. By repeating these phases, it is various locations or source discernment can be continuously encoded through the audible part of a segment. Since it reflects that the source of a segment changed or is coped with suitably in addition to this, subsequent identification information can be changed.
the -- 2A Fig. shows one embodiment 200 which was excellent in the personal monitor of this invention. The personal monitor 200 is equipped with a microphone 230, an amplifier 240, a low-pass filter 250, A/D converter 255, a buffer 260, a converter 265, correlator 270, input terminals 275 and 285, a coupler 280, and memory 290. Generally, people attach the broken line of the outside of the 2nd the A Fig. to the body, for example, it shows the tank of the measuring instrument stopped with a clip to a viewer's clothes.
the -- as shown in 2A Fig., the coding audible part of a broadcast segment is received to the input terminal 205 of the common broadcast receiver 210, and a receiver 210 reproduces an audible part as a sound using a loudspeaker 220. A receiver 210 and a loudspeaker 220 are equipment which a viewer usually uses at home etc., and reproduce a broadcast audible signal as a sound. Or the sound recording segment containing a coding audible part may be reproduced with a video tape recorder etc., and the audible part may be reproduced as a sound by loudspeakers, such as a loudspeaker 220.
In response to the audible part reproduced as a sound of broadcast or a sound recording segment, the energy of a sound is transformed into an electrical signal with the microphone 230 of the personal monitor 200. The changed electrical signal is supplied to amplifier 240 by the cable or radio. An amplifier 240 is the output signal which is illustrated as an automatic-gain-control amplifier and raised power level.
It generates.
the -- in 2A Fig., the viewer is illustrating joint 235A of a microphone 230 and amplifier 240 as what is

dedicated in the personal monitor 200 to put on. the -- another joint 235B which has the same function as joint 235A in 2B Fig. is shown. A viewer attaches joint 235B to the body, and it is equipped with the 1st equipment 241 physically separated from other parts of a monitor 200, and the 2nd equipment 242 contained in the tank to which the remaining part of a monitor 200 is dedicated. the -- the equipment with which the case where a viewer is a child, and a viewer attach to the body the equipment shown in 2B Fig. is specially made, when the smaller one is desirable.

The 1st equipment 241 of joint 235B is equipped with a microphone 230, a transmitter 231, and an antenna 232. The electrical signal changed with the microphone 230 is supplied to a transmitter 231. A transmitter 231 generates the signal which was suitable for wireless transmission from the changed signal, and supplies it to an antenna 232. An antenna 232 transmits a signal on radio from a transmitter 231.

The 2nd equipment 242 of joint 235B is equipped with an antenna 233 and a receiver 234.

An antenna 233 receives the broadcast from an antenna 232, changes it into an electrical signal, and supplies this to a receiver 234. A receiver 234 generates the output signal of the raised power level corresponding to the output of an amplifier 240.

The 2nd C Fig. shows another joint 235C, and with the portable equipment 225 generally [a viewer attaches to the body, and carry and] used with headphone 226, when hearing a radio broadcasting or a playback sound, it uses it. Joint 235C is equipped with the distributors 238, such as the output terminals 237, such as the input terminals 236, such as a jack, and a plug, and mere Y cable, and amplifier 239. It combines with portable equipment 225, and an input terminal 236 receives a broadcast audible signal, and supplies it to the distribution machine 238. A distributor 238 supplies the copy of the signal from an input terminal 236 to amplifier 239 and an output terminal 237. An amplifier 239 generates the output signal of the raised power level.

The signal from amplifier 240, a receiver 234, or amplifier 239 is supplied to A/D converter 255 through a filter 250. The level of a magnification signal is equivalent to about 50% of the maximum range of a converter 255. A filter 250 performs low-pass wave filtration of a magnification signal, the maximum frequency of a code signal, for example, all the frequencies that exceed 3,000Hz in a certain embodiment, is removed, and higher frequency information prevents what is entered in the frequency domain where encoded information exists (aliased).

A transducer 255 changes a wave filtration signal into a series of 16-bit values, and supplies it to a buffer 260 by making these values into a conversion signal. Supplying it to a converter 265, after a buffer 260 memorizes the changed value, a converter 265 changes the changed value into a frequency domain by the fast Fourier transform, ripple conversion, etc. It is remembered for a synchronization and a trace that each value explains a buffer 260 below by the approach in which slipping conversion (sliding transform) is possible.

Delivery and correlator 270 make these signals correlate with correlator 270 the copy of the signal of a frequency domain, and the code signal G (omega) supplied to an input terminal 275, and recovery source recognition signal X' (omega) is generated. As a part of correlation process, by adjusting read-out from a buffer 260 suitably, as explained above, the copy of the code signal G (omega) is synchronized with an input signal, and FFT or ripple conversion is performed by the right set of time domain data. It downloads to this desirably, and although a code signal may be supplied to a personal monitor with wiring, as stated above, it is easy to change a code. Recovery and a synchronization of a signal are explained more to a detail below.

Although it is not illustrating in order to make it legible, a central processing unit can be formed in the personal monitor 200, and a synchronization and other data administration facilities can be given.

Correlator 270 generates the output signal showing the bit corresponding to recovery source recognition signal X' (omega), it combines with the time amount stamp which supplies this to an input terminal 285, and it sends and memorizes it in memory 290, further, with the information on additional, is sent to a central data processor and identifies a viewer. The sequence number or other identifiers etc. which were assigned to the monitor 200 are sufficient as the information on additional, and central apparatus are taken as the index of the look-up table which associates the sequence number and the viewer of a

monitor using this. The information on additional is memorized to memory 290 or ROM. In the embodiment of the 2nd the B Fig., as explained above, a transmitter 231 is transmitted as information on the addition to a central data processor, suitable sequence number, i.e., identifier, which is combined with a time amount stamp and which identifies those who put on equipment. Thereby, a single radio-transmission channel can be used. In another mode, a monitor 200 can identify the wireless transmitter 231, therefore a corresponding viewer by assigning the transmission channel of a proper to each wireless transmitter 231 used by domestic [predetermined].

In order to transmit the information from memory 290, the personal monitor itself may be sent to central apparatus, and data with a time amount stamp may be read to the base station located in a viewer's place of residence, for example, and you may send by the dialing communication link between a base station and central apparatus.

Actuation of an encoder 100 and the personal monitor 200 is explained below.

It returns to Fig. 1, and as stated above, D/A converter 150 is sampled at the rate of per second 8,192 sample. In the minimum Nyquist rate, this is equivalent to the signal speed of 4,096Hz. According to the balance chosen between the desired data rate and the error rate, the frequency component to 0 to 4,096Hz is chosen. the -- as shown in 3A Fig., in this embodiment, only 676 corresponding to a 300 to 3,000 Hz frequency range are used.

As shown in the 3rd D Fig., the code signal G of 676 die length (omega) is chosen. The value of each point, i.e., a code signal, corresponds to 4Hz spacing. Since this code signal has a fake noise property, it is easy to process synchronously, and it is hard coming to sense encoded information, and the frequency response characteristic of the common receiver 210 and a loudspeaker 220 becomes the optimal.

The source discernment data which consist of the time amount of "09:32 1/30/92" for example which appears this and by turns along with the source information and/or the date stamp, or its digital display, the sequence 4 of a bit, for example, a "channel", showing the source of broadcast, are defined. Or in a sound recording segment, when recording, the data which identify each program and related time amount stamp are defined, and reproduction speed is detected by comparing the recorded related time amount stamp with the time amount stamp generated in 200 in the personal monitor. the -- 3B Fig. shows such a sequence expressed with 1 a binary digit, "0 1...1". [i.e.,]

According to the selected diffusion ratio, discernment data are mapped namely, diffused in the recognition signal X with mark equal to the mark of a code signal (omega). The encoder of Fig. 1 uses 1352:1 which is an effective diffusion ratio. That is, two conversion includes all the chips in a corresponding bit. However, the 3rd C Fig. only shows the ratio of 10:1, in order to simplify drawing. That is, each bit of source discernment data corresponds to ten points of the recognition signal X (omega) shown in the 3rd C Fig.

a modulator 120 -- the antipodal code signal G (omega) and a recognition signal X (omega) -- becoming irregular -- the -- modulating-signal X(omega) G (omega) shown in 3E Fig. is made. an antipodal signal -- an advance to second base -- when it expresses with a data stream, an advance to second base "0" corresponds to antipodal "+1" signal level, and an advance to second base "1" corresponds to antipodal "-1" signal level. If specified, many points of each signals X (omega) and G (omega) corresponding to the same 4Hz frequency spacing will be multiplied, and the result which corresponds in exclusive-OR actuation will be obtained.

It distributes by the media which carried out inverse transformation of the set showing the modulating signal of a frequency domain of a point with the inverter 130, made the coding source recognition signal of a time domain, were mixed with the audible part of a segment, and broadcast this, or were recorded beforehand.

With the personal monitor 200, a converter 265 changes an input signal into the set of the point of a frequency domain. the set of the point recovered when a coded signal was received completely -- the -- it corresponds to the modulating signal shown in 3E Fig. correctly.

by carrying out the multiplication of the point of two signals corresponding to the same 4Hz frequency spacing, correlator 270 correlates the set of the recovered point with the set of the point of the synchronous code signal G (omega) -- making -- the -- recovery source recognition signal X' (omega)

shown in 3F Fig. is generated. The bit corresponding to X' (omega) is recovered by taking the average of the point which diffused the bit with the encoder. In this example, the value which calculates the average of ten points about each bit shown in the 3rd F Fig., and is shown in the 3rdG Fig. is acquired. Other approaches of making it correlate with a wave etc. are suitable for recovering a discernment bit.
3rdH-3K Fig. shows recovery of a bit in case an input signal includes a noise. The 3rdH Fig. shows the set of the point of having recovered the converter 265. Although the first two of ten points recovered are an error as a bold letter shows, according to the 2nd ten point, four continuous points are errors and it has become by the 3rd ten point the mistaken point which four points recovered correctly, and by turns. The 3rdJ Fig. shows recovery source recognition signal X' (omega) based on data with many noises, and includes many points which the value mistook. the -- 3K Fig. shows the average of the each recovered bit. When an average value is rounded off to the nearest binary value (0 or 1), whether even four points are errors in ten points of each bit or having received correctly in ten points is only six points, it turns out that source discernment data are recovered completely.
As already stated, this embodiment uses 676 points about each ** bit. Namely, what is necessary is to receive only the value of 339 points in 676 points correctly, in order to recover source discernment data completely since two conversion includes all the chips in a corresponding bit.
Generally the personal monitor 200 records only events, such as change of the source discernment data produced by generally changing the channel of television or radio, and time-out failure generally [when / which a viewer can detect / it is out of range or the monitor 200 is not attached to the body] produced.
The viewer records the broadcast segment and may reproduce it later. By comparing the time amount stamp attached when the time amount stamp and the personal monitor which are contained in recovery discernment data memorize recovery discernment data, a central data processor can detect this. Similarly, it is detectable by investigating change of the time difference of the time amount stamp of a sound recording segment and a monitor when the viewer changed the usual playback of a segment. When a viewer weakens sound volume of a sound signal over most time amount during broadcast, it records that a personal monitor does not have a signal event. If it recovers on the level which can detect the sound volume of a sound signal, a personal monitor will record this noting that source discernment data change. If a viewer's uploaded record is analyzed correctly, central apparatus can detect "elimination (zapping) of commercials", and, thereby, an advertiser can measure a viewer's reaction to the audible part of his commercials.
Moreover, this invention is useful although the unjust copy of sound recording segments, such as music beforehand recorded on the tape and disk for sale and video, i.e., "the pirate edition of a tape", is detected. That is, the coded data in a sound recording segment identifies the program according to individual, and identifies the sequence number of specific copies (a cassette, disk, etc.) of a sound recording segment. When the record and the viewing-and-listening diary which how many persons of that viewer uploaded contained the same program and the sequence number of a specific copy, this segment may have been copied unjustly.
If this invention is used, investigation of a viewer can be limited to the time amount frame easily chosen by various approaches. For example, the thing for which the date examines whether it is within the limit [of an investigation period] by the software of a personal monitor, Between the selected time amount frames loads or downloads a code to a personal monitor, It is choosing with a personal monitor based on the date or time amount from the sets of the code memorized inside, using a code signal based on a date and/or time amount, analyzing the uploaded viewer diary by central apparatus, etc.
the -- operative condition with this invention another [4A Fig.] -- the encoder [like] 102 is shown. An encoder 102 is equipped with an input terminal 185, the address generation machine 186, read-only memory (ROM) 180, D/A converter 150, a low-pass filter 160, a mixer 170, and an output terminal 175.

For example, the source recognition signal x of the bit format of a time domain (t) is supplied to the address generation machine 186 through an input terminal 185. The address generation machine 186 makes the set of the address according to each bit of a recognition signal x (t), and supplies each address

of this set to ROM180 serially. Although ROM180 contains the data corresponding to the code signal of a frequency domain, this already performed inverse transformation and has memorized it as data of a time domain. ROM180 reads the contents of the memory location specified in each address, and supplies the contents to D/A converter 150 as a source recognition signal of a time domain. D/A converter 150, the low-pass filter 160, the mixer 170, and the output terminal 175 were explained above in relation to Fig. 1.

If actuation is explained and each bit of a recognition signal x (t) will be given to an input terminal 185, the string of a value will be read from ROM180 as a source recognition signal of a time domain. It is the 2nd code signal to the address 1-2,048 about the data corresponding to [when the easiest, x (t) takes two values, 0 and 1, and] the 1st code signal in ROM180. [for example,]

It is alike and corresponding data are included to the address 2,049-4,096. As long as it is required, ROM180 may memorize an additional code. In this example, when the value of x (t) is 0, the 1st code signal in the address 1-2,048 is read, and when the value of x (t) is 1, the 2nd code signal in the address 2,049-4,096 is read.

Moreover, although ROM180 is illustrated as what performs the function of the buffer 140 of Fig. 1, as long as it is required, another buffer may be formed in an encoder 102.

the -- 4B Fig. -- the -- it is equipment which programs ROM180 of 4A Fig., and has an input terminal 181, an inverter 182, and a processor 183.

The antipodal code signal G of the frequency domain of a bit format (omega) is supplied to an inverter 182 through an input terminal 181. An inverter 182 is the same as the inverter 130 of Fig. 1, makes time domain code data by reverse FFT or ripple conversion, and supplies them to a processor 183. A processor 183 generates the required write-in address, supplies this write-in address to ROM180, and memorizes namely, carries out the "burn-in" of the code data of a time domain to these write-in addresses.

This process is repeated between additional 1 code signals G (omega) at least. The code signal G (omega) is the reverse copy of for example, the 1st code signal. Since ROM180 which carried out the burn-in contains code data, it can use with an encoder 102.

since an inverter 102 is the need only in the main location so that he can understand easily -- the -- the equipment of 4B Fig. -- the main location -- placing -- two or more the 4A -- as compared with the configuration of Fig. 1, it can make cheaply by putting on the location which distributed each encoder 102 of a Fig.

The 4th C Fig. shows the coding system of still more nearly another embodiment of this invention. The coding system of the 4th C Fig. is equipped with an encoder 104, a telephone network, and a central data processor.

An encoder 104 is equipped with input terminals 191 and 192, a processor 190, a modem 194, an interface circuitry 196, random access memory (RAM) 198, a data bus 199, D/A converter 150, a low-pass filter 160, a mixer 170, and an output terminal 175.

Supplying the set of the antipodal code signal G of the frequency domain of a bit format (omega) to a central data processor, a central data processor performs reverse FFT or ripple conversion using an inverter (not shown in order to make it legible), and makes the code data aggregate of a time domain. Next, a central data processor sets up a communication link with an encoder 104, and downloads the code data aggregate of a time domain. Moreover, the write-in address with which this code data corresponds may also be downloaded to an encoder 104. Although the communication link is illustrated in the 4th C Fig. so that it may set up through a public exchange telephone network (PSTN), another communication link which is explained in relation to Fig. 9 later may be used.

The data downloaded from the central data processor are received to the modem 194 of an encoder 104 through an input terminal 191. The downloaded data are transmitted with a data bus 199, and are memorized to the address downloaded as some data in RAM198, or the address which the processor 190 generated. After memorizing code data to RAM198, RAM198 carries out the same function as ROM180 of the 4th the A Fig.

A recognition signal x (t) is supplied to an interface circuitry 196 through an input terminal 192. A

processor 190 generates the set of the read-out address of each bit of Signal x (t), and supplies these addresses to RAM198 through a data bus 199. Or an interface circuitry 196 may generate the set of the address and may supply this to RAM198 through a data bus 199. Data are read from RAM198 for every bit of Signal x (t), and the source recognition signal of a time domain is generated by the same approach as the embodiment of the 4th the A Fig.
Actuation of D/A converter 150, a low-pass filter 160, a mixer 170, and an output terminal 175 was explained in relation to Fig. 1 above.
Fig. 5 shows another embodiment of the encoder of this invention. Direct sequence spread-spectrum coding in a time domain is used for this. An encoder 300 is equipped with input terminals 305 and 310, a modulator 320, a low-pass filter 360, a mixer 370, and an output terminal 375.
The source recognition signal x (t) expressed in the time domain is supplied to an input terminal 305, and code signal [of a time domain] g (t) is supplied to an input terminal 310. Signal x (t) and g (t)
A modulator 320 is supplied, these signals are modulated, the coding source recognition signal of a time domain is generated, and a low-pass filter 360 is supplied. A low-pass filter 360 removes a desired alias out of range.
With a mixer 370, the coding recognition signal which carried out wave filtration is combined with the audible part of a segment, and it is made it not to be sensed for that it explained above in relation to the mixer 170 of Fig. 1, then, it sends to the output terminal 375 of an encoder 200, and broadcasts by the conventional approach.
Fig. 6 shows another embodiment 400 of the personal monitor of this invention. The personal monitor 400 is equipped with a microphone 430, amplifier 440, a low-pass filter 445, correlator 450 (this is equipped with a multiplier 452, an integrator 454, and a comparator 456), input terminals 460 and 465, a coupler 470, a switch 475, a sensor 480, and memory 490. By the same reason as having explained above in relation to the personal monitor 200, a central processing unit may be formed also in the personal monitor 400.
a microphone 430 -- the -- as it relates to 2A Fig. and being explained above, the audible part reproduced as a sound of a broadcast segment is changed, and an electrical signal is generated. Subsequently to a filter 445, the electrical signal acquired from the microphone 430 is supplied to amplifier 440. These are the same as the amplifier 240 of the 2nd the A Fig., and a filter 250 respectively. The copy of code signal g (t) is supplied through a terminal 460, and the signal output which carried out wave filtration from the filter 445 is supplied to correlator 450.
Including a multiplier 452, a multiplier 452 carries out the multiplication of the signal and code signal which carried out wave filtration, and correlator 450 supplies a multiplication result to an integrator 454. It integrates with an integrator 454 over the bit section, it makes an integral signal, and supplies it to a comparator 456. The bit section is 0.25 seconds when a bit rate is 4 bits/s. A comparator 456 lets a code signal slide along with a time window, it integrates with the point of a code signal of defining initiation of a signal, i.e., by advancing or delaying, synchronizes the copy of a code signal with the signal which enters, and makes an integral signal the optimal.
When specified more, the source recognition signal x (t) has the same logic state (0 or 1) in each chip corresponding to 1 bit. When a broadcast signal is received without an error, the value of each chip obtained from multiplication with the input signal which carried out wave filtration to the copy of a code signal has the same value during the period of a bit. Thus, a synchronization can be taken when the result of an integral is equivalent to the average chip value of 0 or 1. When an input signal and a code signal do not synchronize, the result of an integral is 0 or not 1 but the average near 0.5.
If a synchronization can be taken, by letting a time window slide, it can adjust and the trace of a signal into which it comes can be continued.
Generally, a synchronization must be taken for every segment to which the viewer is viewing and listening.
When a personal monitor does not receive a signal over most time amount like [when a viewer goes to another room], a monitor records this as loss of a signal event. When a viewer returns to the room where broadcast and playback are performed, it is necessary to take a synchronization again.

If a synchronization is taken, comparison 456 outputs recovery source discernment data to a coupler 470, and a coupler 470 will combine with the time amount stamp which supplies this to an input terminal 465, will make a signal with a time amount stamp, and it will supply it to a switch 475.
A heat sensor or a detection sensor of operation may be used, and a sensor 480 detects whether people attach the personal monitor 400 to the body, or [therefore] the man is receiving broadcast, and when people attach the personal monitor 400 to the body, it generates an enable signal. a ******** [operating a personal monitor with this enable signal] -- controlling -- the power source of a personal monitor -- generally a recharge possible cell can be used efficiently. use of such a sensor -- this specific operative condition -- it is restricted like -- ********** -- the -- what kind of operative condition of personal monitors, such as the personal monitor 200 shown in 2A Fig., -- you may use also like. The enable signal from a sensor is supplied to a switch 475.
When an enable signal is operating state, a switch 475 sends and memorizes a signal with a time amount stamp in memory 490, and as explained above, it transmits it to a central data processor further.
Or the signal from a sensor 480 is sent to a coupler 470, and a switch 475 is stopped, and when recovery discernment data with a local time amount stamp and discernment data are recovered, you may make it the personal monitor 400 memorize directions of whether the viewer put on the monitor.
Furthermore, this invention can be used with a video tape recorder (VCR), and a broadcast segment can be supervised during sound recording again. The audible part of the baseband signaling instead of the signal reproduced as a sound which the tuner of VCR outputs includes a coding recognition signal. In this case, a monitor detects that VCR is recording and is a sound recording signal.
********** is memorized. The diary about VCR is uploaded like the diary which the personal monitor 400 makes.
Fig. 7 shows still more nearly another embodiment 500 of the encoder of this invention. An encoder 500 is equipped with input terminals 505 and 515, a modulator 510, a frequency synthesizer 520, mixers 525 and 540, a low-pass filter 530, and an output terminal 545. The source discernment data x (n) are supplied to a modulator 510 through an input terminal 505, and it becomes irregular by the sine signal. Code data g (n) is supplied to a frequency synthesizer 520 through an input terminal 515, and the output of a frequency synthesizer 520 is controlled. If specified more, usable bandwidth will be the range of 300 to 3,000 Hz, and will divide this into M narrower bands. Each bandwidth is (3,000-300) / M. It is Hz. By each chip time amount, a frequency synthesizer output is changed into one center frequency of an M band region according to code data g (n) which specifies a band hopping (hopping) sequence, and the code signal which hopped the frequency is generated.
The sine signal which conveys source discernment data, and the code signal which hopped the frequency are supplied to a mixer 525, it mixes here, a coding recognition signal is made, a low-pass filter 530 is supplied, and a desired alias out of range is removed.
the coding recognition signal which carried out wave filtration is related with the audible part of a broadcast segment, and the source of broadcast -- a detail is given further -- probably a mixer 540 is supplied with the information on additional. A mixer 540 mixes these signals and takes out an audible-signal part with a coding recognition signal to an output terminal 545. The segment containing this audible part is broadcast through broadcast equipment.
Fig. 8 shows still more nearly another embodiment 600 of the personal monitor of this invention. The personal monitor 600 is equipped with a microphone 630, amplifier 635, a low-pass filter 640, input terminals 645 and 675, a frequency synthesizer 650, a mixer 660, a demodulator 670, a coupler 680, and memory 690. By the same reason as having explained the personal monitors 200 and 400 above, a central processing unit may be formed in the personal monitor 600.
a microphone 630, amplifier 635, and a low-pass filter 640 -- the -- since the same actuation as the element with which 2A Fig. and Fig. 6 correspond is carried out, and it is brief, these explanation is omitted.
The copy of code data g (n) is supplied to a frequency synthesizer 650 through a terminal 645, and the output is controlled. The frequency of the output of a synthesizer 650 is the same as the output of the synthesizer 520 of Fig. 7.

The signal which carried out wave filtration from the filter 640, and the signal which compounded the frequency from a synthesizer 650 are supplied to a mixer 660, these are mixed, and a recognition signal is recovered. In other words, a mixer 660 makes the signal which carried out wave filtration, and the signal which compounded the frequency correlate. That is, a mixer puts these signals on coincidence, i.e., an interrelation.

A recovery recognition signal is supplied to a demodulator 670, it gets over here, recovery discernment data are made, and it joins together by the data with a time amount stamp and the coupler 680 which are supplied through a terminal 675. Discernment data with a time amount stamp are supplied and memorized in memory 690, and as explained above, it transmits to a central data processor further.

Fig. 9 shows the supervisory equipment 700 of another embodiment of this invention. Supervisory equipment 700 is equipped with a terminal 705, 715, 735, a modem 710, tuners 720 and 740, demodulators 725 and 745, decoders 730 and 750, the clock circuit 755 and memory 760, a processor 770, and a data bus 780. The clock circuit 755 supplies time amount and the date information by the conventional approach according to a demand of various blocks of an encoder 700.

As shown in Fig. 9, the signal containing a broadcast segment is received to the input terminal 735 of a monitor 700. A broadcast signal has an audible part including a coding source recognition signal. Subsequently to a demodulator 745, an input signal is supplied to a tuner 740, and a baseband broadcast signal is recovered. Or a tuner and a demodulator may be used as another equipment and a baseband broadcast signal may be directly supplied to a monitor 700.

As another mode, each broadcast source, such as radio or a television station, may be prepared within the enclosure with equipments, such as the monitor 700 which supervises which program is actually broadcast in the encoder as shown in Fig. 1, Fig. 5, and Fig. 7. In this case, if an encoder and a monitor are dedicated in the same tank, the magnitude of the required whole equipment can be reduced.

It is because an encoder and a monitor may share the memory of for example, a code signal, and baseband signaling is directly usable, so a tuner and a demodulator are unnecessary.

a baseband broadcast signal -- a decoder 750 -- supplying -- a decoder 750 -- the -- a source recognition signal is extracted by the same approach as having used with the personal monitor shown in 2A Fig., Fig. 6, and Fig. 8.

Moreover, a decoder 750 extracts the information on the addition in the received broadcast segment. This may be mixed with an audible part, after carrying out direct modulation in an audible part and encoding using a diffusion signal, as explained above, or it may be modulated in another part of a broadcast segment. The information on this addition may include the information about discernment of the program in the broadcast segment not existing in advertising source identification information and the information encoded in voice grade since an usable capacity was restricted.

About each broadcast segment, a decoder 750 supplies and memorizes the source identification information extracted from voice grade, the information on additional, and suitable time amount stamp information in memory 760 through a data bus 780.

For example, a processor 770 detects having become the time amount which uploads the information about the broadcast segment memorized in memory 760 at periodical spacing called every day. A processor 770 sets up the circuit to a central data processor by Public Switched Telephone Networks using a modem 710. Although the telephone line of dedication may be connected to a terminal 705, installation is flexible, and since cost can be saved, the dial circuit is more desirable. A wide area network may be used as another mode for this reason. When a circuit is set up, a processor 770 orders memory 760, and makes required information supply to a data bus 780, and orders a modem 710, and makes this information transmit to central apparatus. Or an instruction may be sent to memory 760 from central apparatus, and data may be made to transmit.

A broadcast signal can be supervised in predetermined radio or a predetermined television broadcasting commercial scene using a monitor 700, and it can be determined segments which segments are one or more channels, or were broadcast by which time amount from one or more offices. A monitor 700 can be made to correlate with the data of the personal monitor which decodes segment identification information, determines of which program, commercials, and others the segment was broadcast, sends

this information to a central data processor, and is sent by each viewer in a certain application.
Furthermore, in another application, the report which determines the commercials which are one or more channels or are broadcast from one or more stations, and determines the tariff paid to a broadcasting station from the purchaser of the royalty of an advertiser or broadcast equipment is drawn up, and/or the report of market research is drawn up.
Furthermore, in another application, a monitor 700 collects the data in which it is shown which protection-of-copyrights work was broadcast by one or more channels from one or more stations. For example, if a certain radio station broadcasts repeatedly the song recorded beforehand, analyzes correctly the information which central apparatus uploaded and this condition is detected, a royalty will pay it using this analysis result and it will opt for a duty.
Moreover, a monitor 700 can be used for a domestic monitor and the segment of the program, the commercials, and others which were reproduced or displayed with one or more radios or television receivers can be determined. In this case, it is not necessary to carry out by supervising a viewer's configuration using this invention.
Moreover, central apparatus can download information to a monitor 700 with the telephone line, and can process it after ** immediately again. The case where carry out during the connection which the monitor 700 started and central apparatus start connection is sufficient as this down loading. The examples of the information to download are a prompting message (displayed on a domestic monitor) for collecting information from a user through the updating code signal of coding source identification information, and another interface (not shown in order to simplify and to make it intelligible), the program information which can be performed. In order to make it not altered at the end, it is important to put a monitor 700 on the bottom of control of central apparatus.
Moreover, central apparatus may supply information to another RF channel, and may broadcast it in the group of the dispersed monitoring device 700. This RF channel is encoded to the existing FM broadcasting using a spread-spectrum coding technique. Coding FM broadcasting receives to the input terminal 715 of a monitor 700, subsequently to a demodulator 725, is supplied to a tuner 720, and recovers a baseband broadcast signal to it. Or a tuner and a demodulator may be used as another equipment and a baseband broadcast signal may be directly supplied to a monitor 700. A decoder 730 extracts encoded information from FM broadcasting, and supplies extract information to memory 760 through a data bus 780. Or a decoder 730 tells a processor 770 about having received information through a data bus 780, and responds to an instruction from the processor 770 about processing of extract information.
A monitor 700 can receive information to coincidence from the broadcast segment supplied to coding FM broadcasting supplied to a terminal 715, and a terminal 735, and can pass through a terminal 705, and can receive or transmit data to coincidence.
Coding FM broadcasting may be supplied to an encoder 700 not through RF transmission but through a cable etc.
Although explained to the detail with the embodiment of instantiation of this invention, and drawing of attachment of various deformation, this invention is not restricted to these embodiments itself and explained deformation, and this contractor can make various modification and corrections, without swerving from the range and pneuma of this invention which are specified to the claim.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]

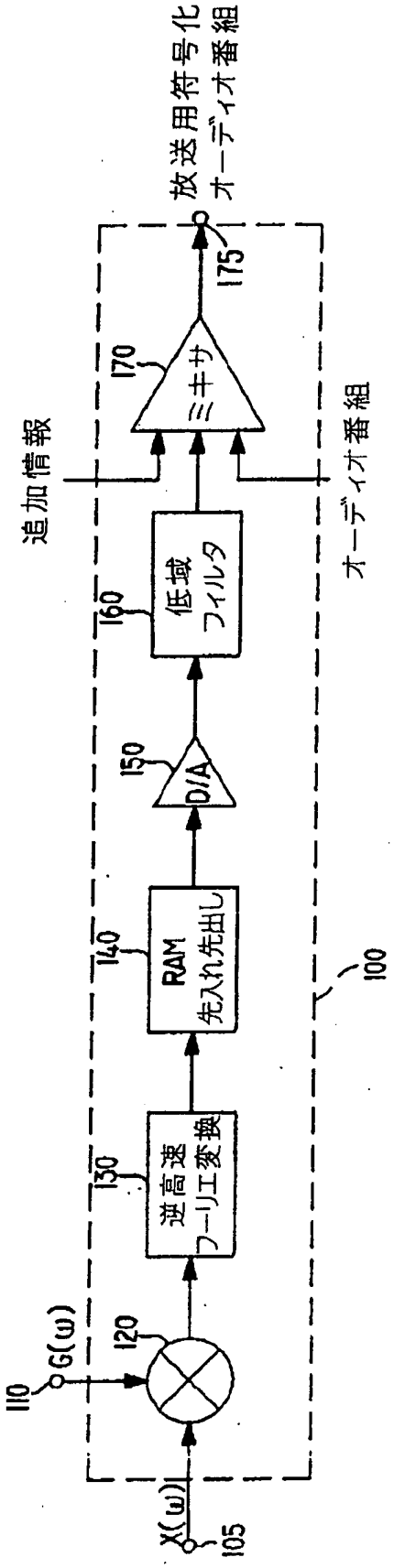
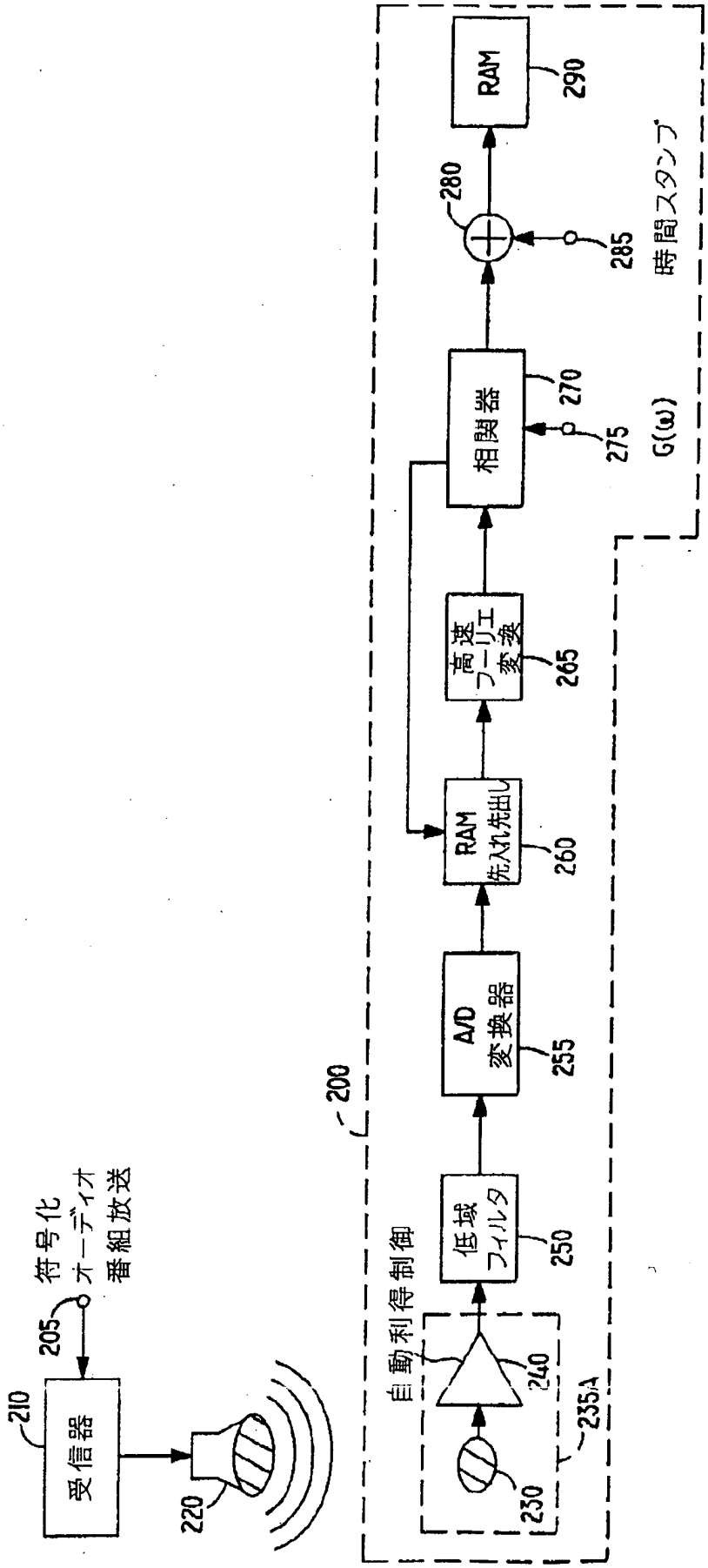


FIG. 1

[Drawing 2 A]


符号化
オーディオ
番組放送
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210
受信器
220
200
自動利得制御
230
235A
240
低域
フィルタ
250
A/D
変換器
255
RAM
先入れ先出し
260
高速
フーリエ
変換
265
相関器
270
275
G(ω)
280
285
時間スタンプ
RAM
290

FIG. 2A

[Drawing 2 B]

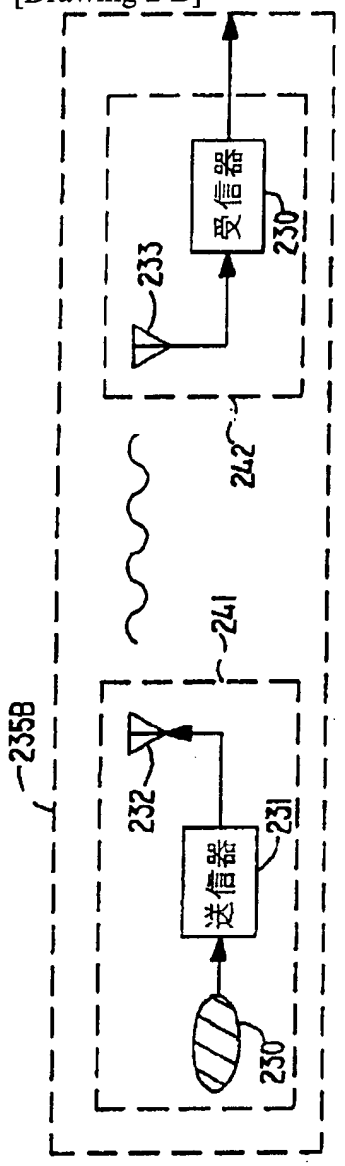


FIG. 2B

[Drawing 2 C]

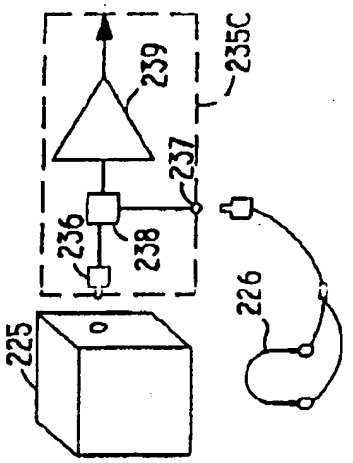
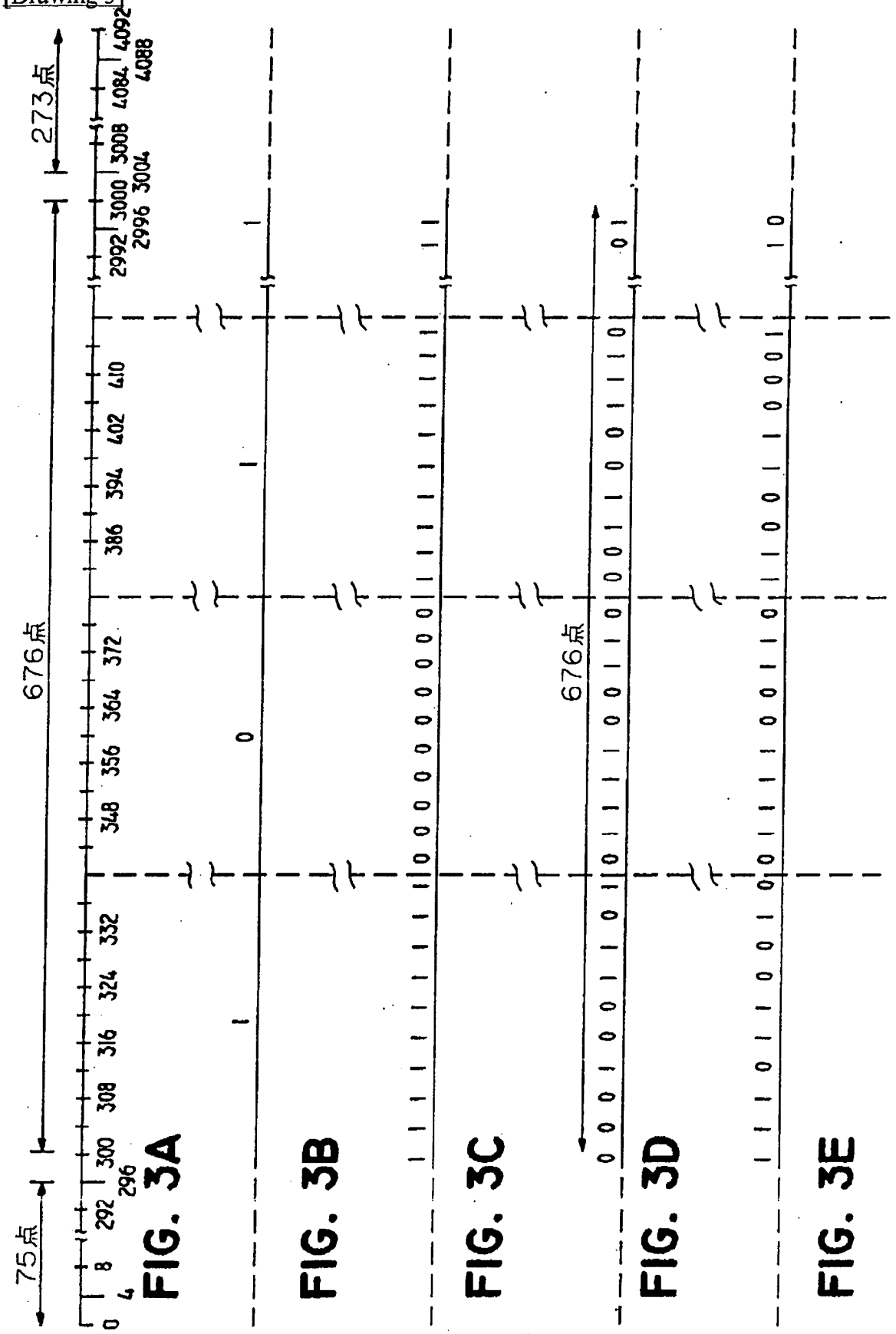
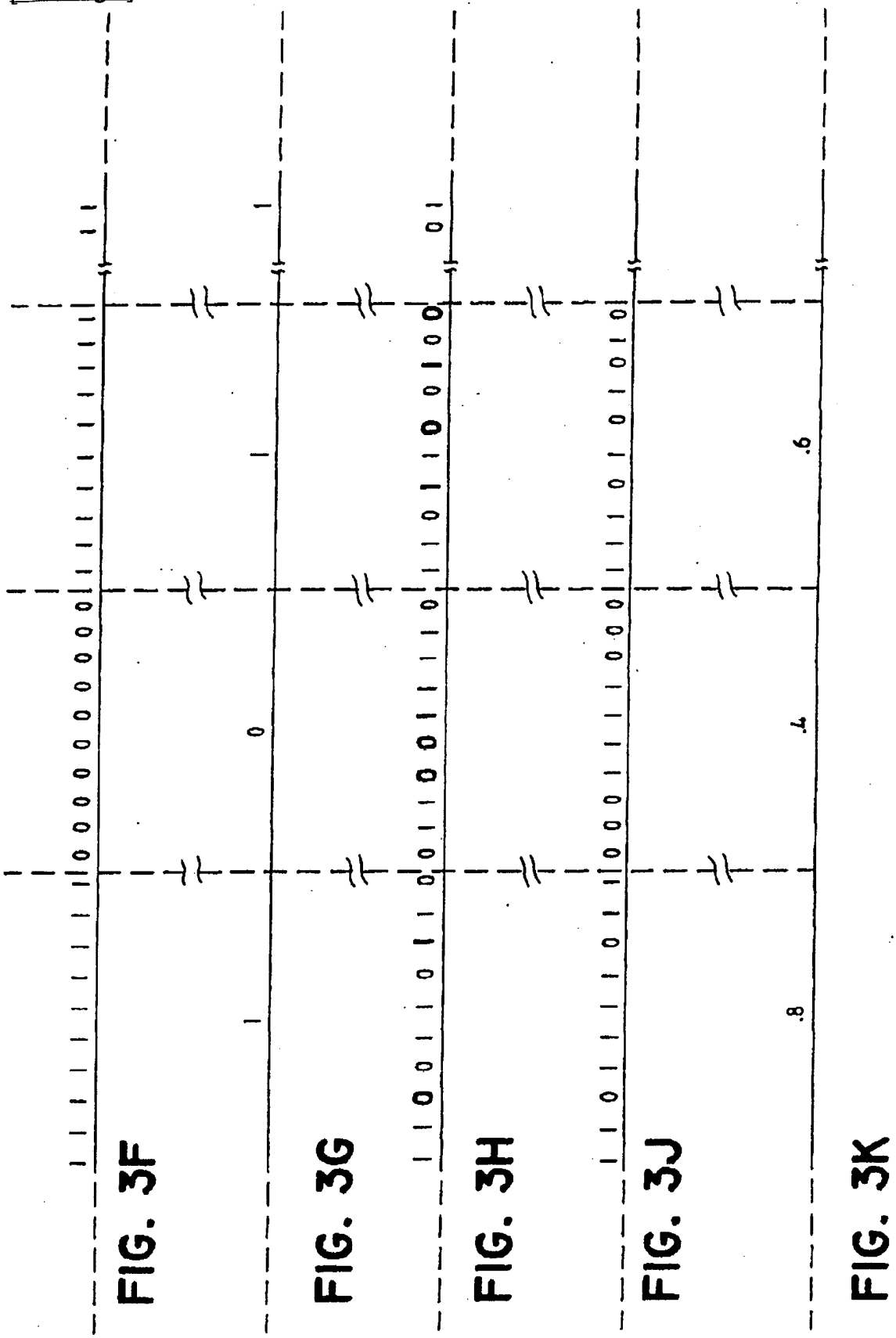


FIG. 2C

[Drawing 3]


273点
676点
75点
0
4
8
292
296
300
308
316
324
332
348
356
364
372
386
394
402
410
2992
2996
3000
3004
3008
4084
4088
4092
FIG. 3A
FIG. 3B
FIG. 3C
FIG. 3D
FIG. 3E

[Drawing 3]



[Drawing 4]

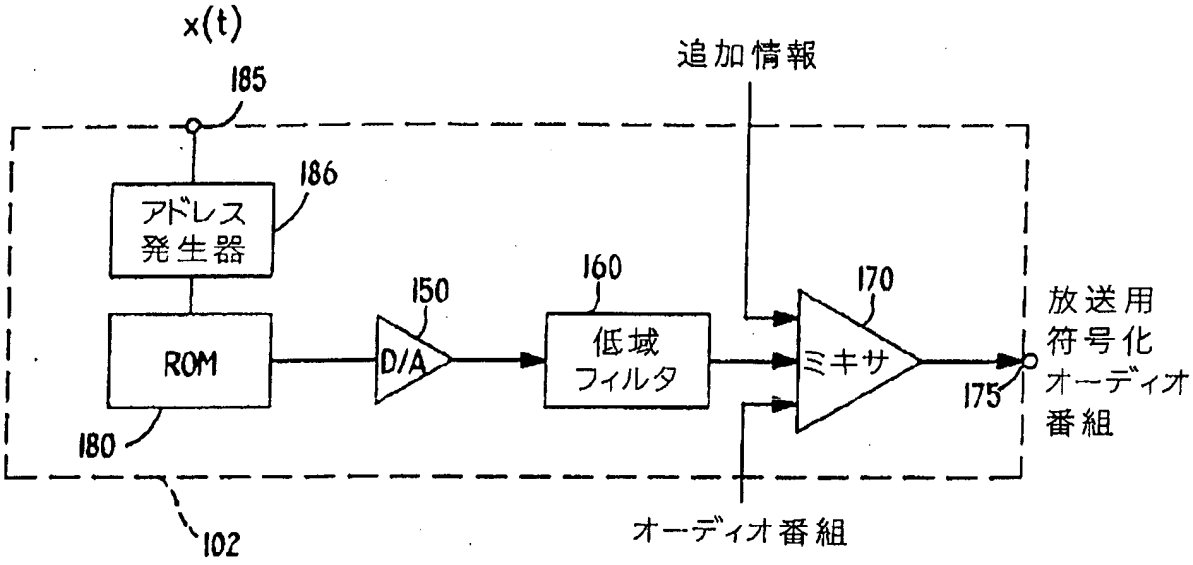


FIG. 4A

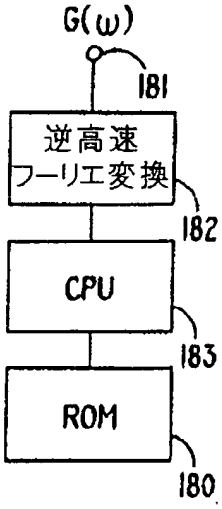


FIG. 4B

[Drawing 4]

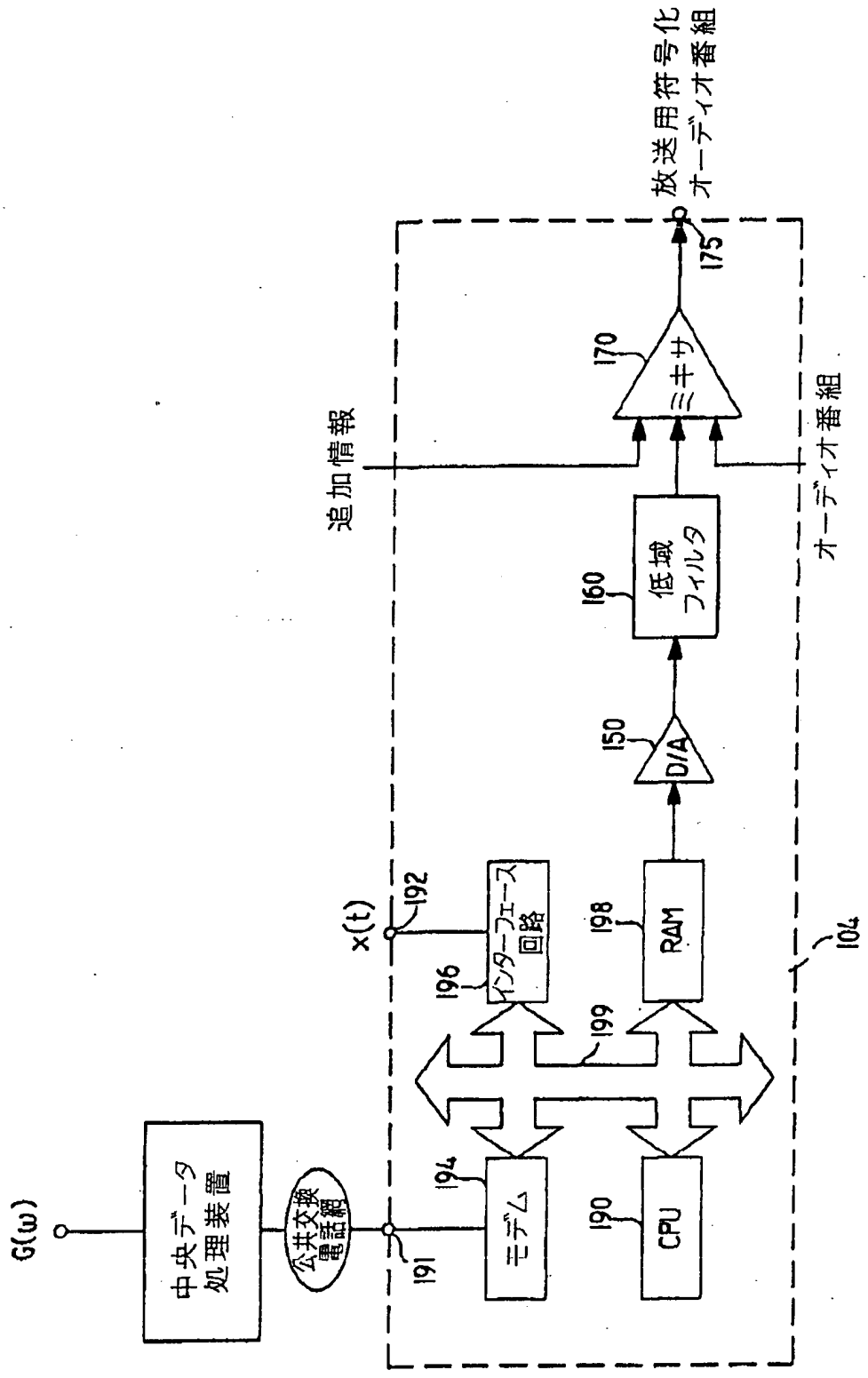


FIG. 4C

[Drawing 5]

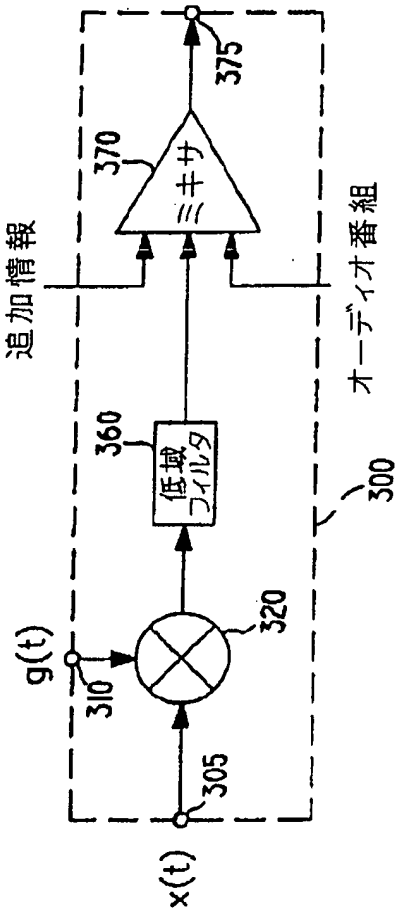


FIG. 5

[Drawing 6]

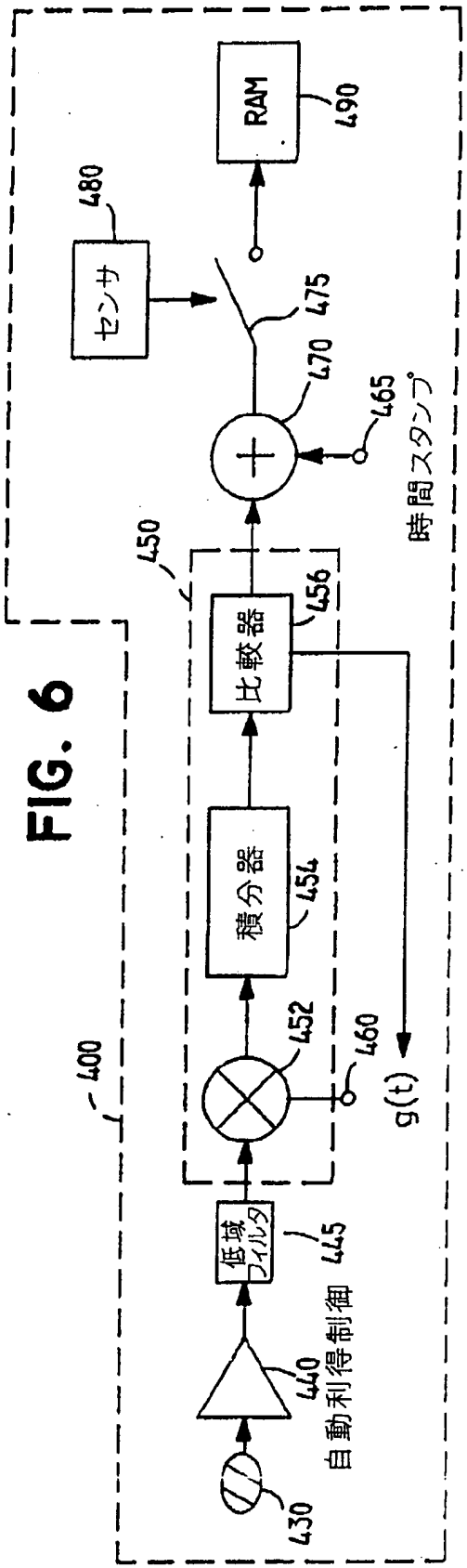


FIG. 6

[Drawing 7]

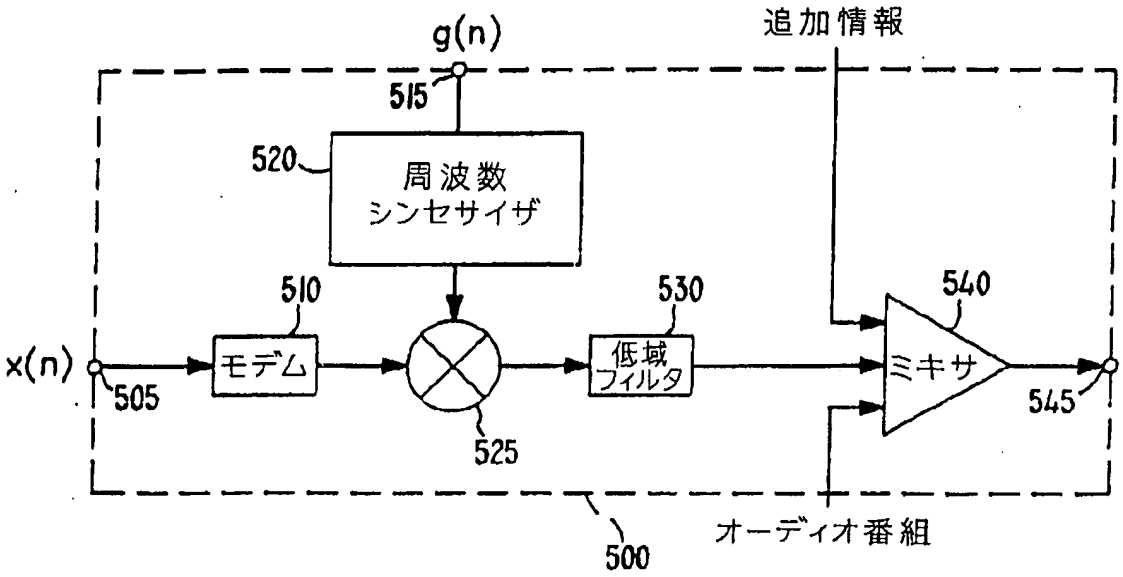


FIG. 7

[Drawing 8]

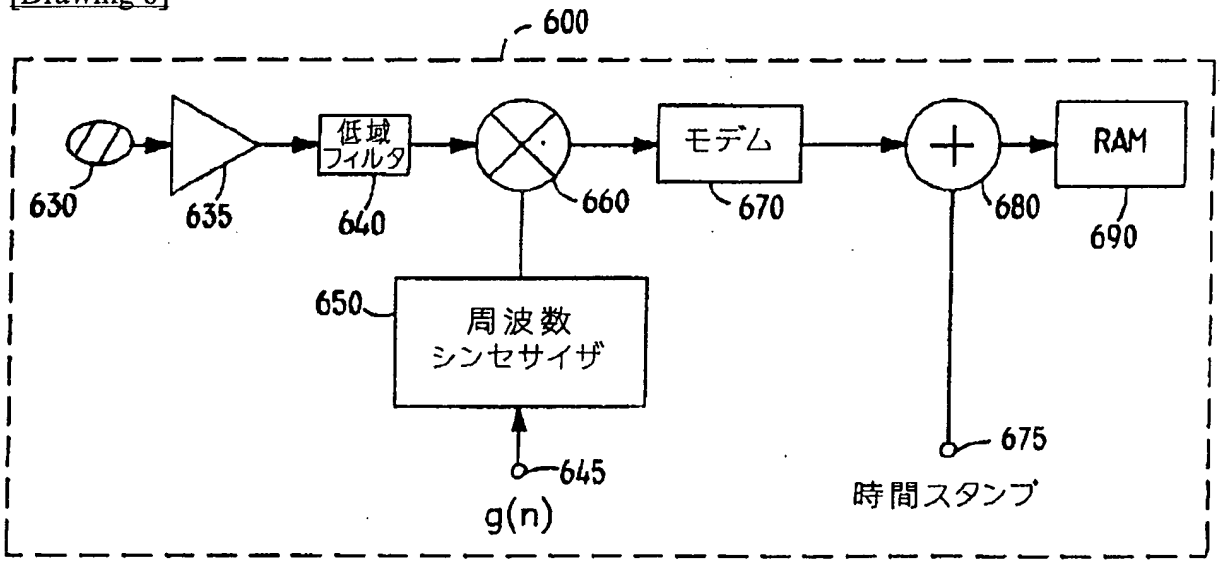


FIG. 8

[Drawing 9]

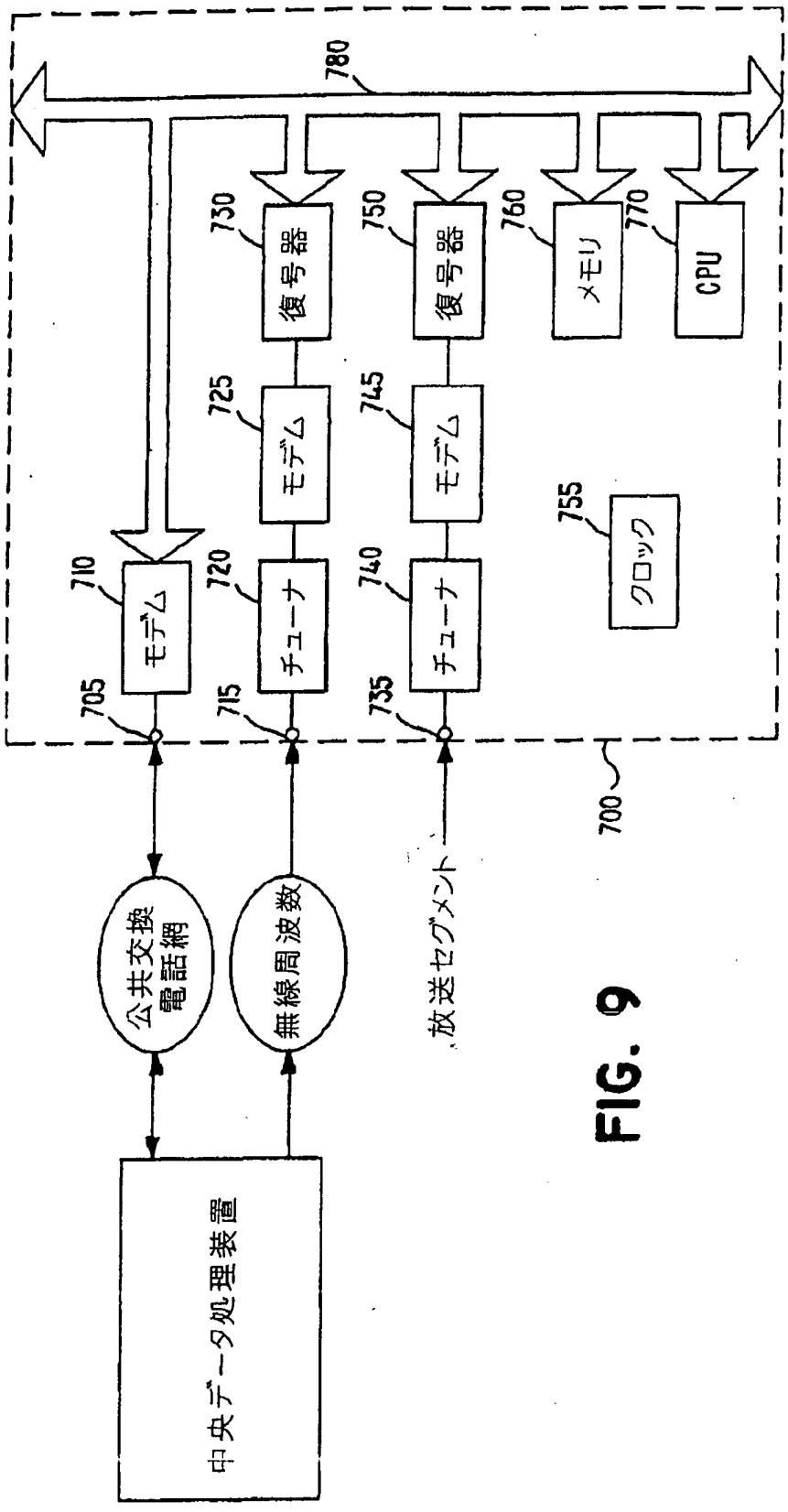


FIG. 9

[Translation done.]

* NOTICES *

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CORRECTION OR AMENDMENT

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[Official announcement day] September 10, Heisei 8 (1996. 9.10)
[Annual volume number]
[Application number] Japanese Patent Application No. 6-512446
[The 7th edition of International Patent Classification]

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H04N 17/00 N
7/13 Z

手　続　補　正　書

平成１２年１１月１６日

特許庁長官殿

1. 事件の表示

平成６年特許願第５１２４４６号

2. 補正をする者

事件との関係　特許出願人

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氏　名　（６６６９）　浅　村　　皓

4. 補正により減少する請求項の数　　９４

5. 補正対象書類名

請求の範囲

6. 補正対象項目名

請求の範囲

7. 補正の内容　　別紙のとおり

請求の範囲を別紙のとおり補正する。

『 請求の範囲

1. 放送または録音可聴信号内の符号化情報を検出する方法であって、符号化識別信号を持つ可聴信号を含む符号化放送または録音セグメント信号を受信し、ただし前記符号化識別信号は所定の帯域幅を持つコード信号を前記コード信号の前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調することにより作るものであり、また前記可聴信号を前記コード信号の複写と相関させて前記識別信号を回復する、段階を含む方法。

2. 放送または録音可聴信号内の符号化情報を検出する方法であって、符号化放送または録音セグメント信号の音として再生した可聴信号部分を変換して変換可聴信号部分を作り、ただし前記可聴信号部分は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調することにより作る符号化識別信号を持ち、前記符号化識別信号は前記音として再生した可聴信号部分内で情報としては感知されないものであり、また前記変換可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復する、段階を含む方法。

3. 放送または録音可聴信号に含まれる少なくとも1つの著作権保護作品の1つまたは複数のソースを決定する方法であって、少なくとも1つの著作権保護作品を含む符号化放送または録音セグメント信号を受信し、ただし前記少なくとも1つの著作権保護作品は前記少なくとも1つの著作権保護作品のソースを示す符号化識別信号を持つ可聴信号部分を含み、前記符号化識別信号は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して作るものであり、また前記可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復し、また前記少なくとも1つの著作権保護作品の1つまたは複数のソースを表すデータを集める、段階を含む方法。

4. 放送または録音可聴信号内の少なくとも1つのコマーシャル広告の1つまたは複数のソースを決定する方法であって、少なくとも1つのコマーシャル広告を含む符号化放送または録音セグメント信号を受信し、ただし前記少なくとも1つのコマーシャル広告は前記少なくとも1つのコマーシャル広告のソースを示す符号化識別信号を持つ可聴信号部分を含み、前記符号化識別信号は

所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して作るものであり、また前記可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復し、また前記少なくとも1つのコマーシャル広告の1つまたは複数のソースを表すデータを集める、段階を含む方法。

5. 放送または録音する可聴信号に情報を符号化する方法であって、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化識別信号を作り、また前記符号化識別信号を放送または録音する可聴信号と混合して出力信号を作る段階を含む方法。

6. 放送または録音する可聴信号内に情報を符号化しまたその符号化情報を検出する方法であって、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化信号を作り、前記符号化識別信号を前記可聴信号と混合して出力信号を作り、前記符号化識別信号が視聴者から情報として感知されないようにして前記出力信号を音として再生した形式に変換して変換信号を作り、また前記変換信号を前記コード信号の複写と相関させて前記識別信号を回復し、また前記回復識別信号を記憶データとして記憶する、段階を含む方法。

7. 放送または録音可聴信号内の符号化情報を検出する装置であって、符号化識別信号を持つ可聴信号を含む符号化放送または録音セグメント信号を受信する手段と、ただし前記符号化識別信号は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調することにより作るものであり、また前記可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復する手段と、を備える装置。

8. 放送または録音可聴信号内の符号化情報を検出する装置であって、符号化放送または録音セグメント信号の音として再生した可聴信号部分を変換して変換可聴信号部分を作る手段と、ただし前記可聴信号部分は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調することにより作る符号化識別信号を持ち、前記符号化識別信号は前記音として再生した可聴信号部分内で情報としては感知されないものであり、また前記変換可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復する手

段と、を備える装置。

9. 放送または録音可聴信号に含まれる少なくとも1つの著作権保護作品の1つまたは複数のソースを決定する装置であって、少なくとも1つの著作権保護作品を含む符号化放送または録音セグメント信号を受信する手段と、ただし前記少なくとも1つの著作権保護作品は前記少なくとも1つの著作権保護作品のソースを示す符号化識別信号を持つ可聴信号部分を含み、前記符号化識別信号は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して作るものであり、また前記可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復する手段と、また前記少なくとも1つの著作権保護作品の1つまたは複数のソースを表すデータを集める手段と、を備える装置。

10. 放送または録音可聴信号内の少なくとも1つのコマーシャル広告の1つまたは複数のソースを決定する装置であって、少なくとも1つのコマーシャル広告を含む符号化放送または録音セグメント信号を受信する手段と、ただし前記少なくとも1つのコマーシャル広告は前記少なくとも1つのコマーシャル広告のソースを示す符号化識別信号を持つ可聴信号部分を含み、前記符号化識別信号は所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して作るものであり、また前記可聴信号部分を前記コード信号の複写と相関させて前記識別信号を回復する手段と、また前記少なくとも1つのコマーシャル広告の1つまたは複数のソースを表すデータを集める手段と、を備える装置。

11. 放送または録音する可聴信号に情報を符号化する装置であって、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化識別信号を作る手段と、前記符号化識別信号を放送または録音する可聴信号と混合して出力信号を作る手段と、を備える装置。

12. 放送または録音する可聴信号内に情報を符号化しまたその符号化情報を検出する装置であって、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化信号を作る手段と、前記符号化識別信号を前記可聴信号と混合して出力信号を作る手段と、前記符号化識

別信号が視聴者から情報として感知されないようにして前記出力信号を音として再生した形式に変換して変換信号を作る手段と、前記変換信号を前記コード信号の複写と相関させて前記識別信号を回復する手段と、前記回復識別信号を記憶データとして記憶する手段と、を備える装置。

13. 符号化放送信号であって、可聴信号を含む放送信号を与え、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化識別信号を作り、また前記符号化識別信号を前記可聴信号と混合して前記符号化放送信号を作る、ことにより作られる、符号化放送信号。

14. 符号化録音信号であって、可聴信号を含む録音する信号を与え、所定の帯域幅を持つコード信号を前記所定の帯域幅より狭い帯域幅を持つ識別信号で変調して符号化識別信号を作り、また前記符号化識別信号を前記可聴信号と混合して符号化した録音用信号を作り、また符号化した録音用信号を録音して符号化録音信号を作る、ことにより作られる符号化記録信号。

15. 可聴信号に情報を符号化する方法であって、

複数の記号を含む符号化する信号を受信し、

前記各複数の記号について、対応するグループの周波数を表す個々の複数のディジタルデータをメモリから読み出して符号化信号を作り、

前記符号化信号を前記可聴信号と混合して出力信号を作る、

段階を含む方法。

16. 可聴信号に情報を符号化する装置であって、

複数の記号を含む符号化信号を受信する入力と、

それぞれ前記記号の各個に対応しまた各グループの周波数を表す、ディジタルデータの複数のグループを記憶するメモリと、

各記号を入力に受信するとこれに応じてディジタルデータの各個のグループを

前記メモリから読み出す手段と、

前記符号化信号を前記可聴信号と混合して出力信号を作る手段と、

を備える装置。』

[Translation done.]